FY05 as of December 2003

Installation Action Plan

for

Picatinny Arsenal

Installation Management Agency

Northeast Region Office

30% post-consumer material paper

Picatinny Arsenal

December 2003

Picatinny Arsenal Installation Action Plan

Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multi-year restoration program for an installation. The plan will define Installation Restoration Program (IRP) requirements and propose a comprehensive approach and associated costs to conduct future investigations and remedial actions at each identified ER,A eligible site at the installation and other areas of concern.

In an effort to coordinate planning information between the IRP manager, IMA, installations, executing agencies, regulatory agencies, and the public, an IAP has been completed for the United States Army Tank-automotive and Armaments Command, Armament Research, Development and Engineering Center (TACOM-ARDEC). The IAP is used to track requirements, schedules and tentative budgets for all major Army installation restoration programs.

The last IAP was finalized, published and distributed in the December 2003. This IAP is being is being developed representing the 2005 Fiscal Year planning document. With the current projected funding, all IRP sites will be RIP in 2010.

All site specific funding and schedule information has been prepared according to projected overall Army funding levels and is therefore subject to change during the document's annual review.

The following agencies contributed to the formulation and completion of this FY2005 Installation Action Plan for TACOM - ARDEC:

Engineering & Environment, Inc.

Johnson Controls for ARDEC

Restoration Advisory Board Community Co-chair

New Jersey Department of Environmental Protection

Shaw Environmental

Subsurface Solutions, Technical Assistance for Public Participation Contractor

U.S. Army, ARDEC, Picatinny Arsenal IRP Team

U.S. Army Corps of Engineers, Baltimore District

U.S. Army Environmental Center

U.S. Environmental Protection Agency

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Acronyms & Abbreviations

AEC	(United States) Army Environmental Center
ALF	Abandoned Landfill
ADRA	Ammunition Demilitarization and Renovation Area
ARDEC	Armament Research, Development and Engineering Center
AST	Aboveground Storage Tank
BRAC	Base Realignment and Closure
BNA	Base Neutral and Acid
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
COE	Corps of Engineers
Cu	Copper
DERA	Defense Environmental Restoration Account
DD	Decision Document
DRMO	Defense Reutilization and Marketing Office
DSERTS	Defense Site Environmental Restoration Tracking System
ER,A	Environmental Restoration, Army (formerly DERA)
EPA	U.S. Army Environmental Protection
FFSRA	Federal Facility Site Remediation Agreement
FS	Feasibility Study
FY	Fiscal Year
GAC	Granular Activated Carbon
GOCO	Government-owned Contractor-operated
GOGO	Government-owned Government-operated
HRC	Hydrogen Release Compound
IAG	Interagency Agreement
IRA	Interim Remedial Action
IRP	Installation Restoration Program
LOC	Levels of Concern
MCL	Maximum Contaminant Level
MNA	Monitored Natural Attenuation
NE	Not Evaluated
NFA	No Further Action
NJDEP	New Jersey Department of Environmental Protection
NR	Not Rated
NPL	National Priorities List
OB/OD	Open Burning / Open Detonation
ORC	Oxygen Release Compound
P & E	Propellant and Explosive
Pb	Lead
POL	Petroleum, Oil & Lubricants
PRP	Potentially Responsible Party
RA	Remedial Action
RAC	Remedial Action - Construction
RAO	Remedial Action - Operation
RAB	Restoration Advisory Board
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
REM	Removal
RI	Remedial Investigation
RIP	Remedy in Place
ROD	Record of Decision

Acronyms & Abbreviations

RRSE	Relative Risk Site Evaluation
SI	Site Investigation
STP	Sewage Treatment Plant
SVOCs	Semi-Volatile Organic Compounds
TACOM	Tank-automotive and Armaments Command
TCE	Trichloroethylene
TECUP	Toxics and Energetic Clean Up
TNT	Trintrotoluene
TPH	Total Petroleum Hydrocarbons
ug/g	microgram per gallon
ug/l	microgram per liter
USACHPPM	United States Army Center for Health Promotion and Preventive Medicine (formerly USAEHA)
USACE	United States Army Corps of Engineers
USAEHA	United States Army Environmental Hygiene Agency (changed to CHPPM)
USATHMA	United States Army Toxic and Hazardous Material Agency (changed by AEC)
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VOCs	Volatile Organic Compounds

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17	185	PICA-188	Former Laboratory in Building 350
90	186	PICA-189	Firehouse (Building 3316)
145	187	PICA-190	Oil & Acid Storage (Bldg 67)\
37		PICA-191	Former Coal Storage Area (Bldg 3173)
146	189	PICA-192	Garden and Orchard Near Bldg 111
107	190	PICA-193	Green Pond and Bear Swamp Brook
146		PICA-194	Green Pond Brook
108	77	PICA-195	Buildings in 1400/1300/3100/1000 Areas
147		PICA-197	Area O Other Buildings
147		PICA-198	Area N Other Buildings
118		PICA-199	Former Pistol Range Dump & Navy Manure Pit
119		PICA-200	Buildings in Area L
148		PICA-201	Other Bldgs in Area P
148		PICA-202	Other Bldgs in Area J
76		PICA-203	Former Poison Gas Lab
120		PICA-204	Area H & Mid-Valley Groundwater
121		PICA-205	Area B Groundwater
122		PICA-206	Area C Groundwater
123		PICA-207	Storage Building 63
29		PICA-208	DU Scrap Storage Area
124		PICA-209	Building 167, Locomotive Area, Bldg. 430
72		PICA-210	Building 321

Summary

STATUS: National Priority List with a Hazard Ranking Score (HRS) of 42.92. There is an Interagency Agreement (IAG) with the United States Environmental Protection Agency.

Total # of AEDB-R Sites: 175
Active ER,A Sites: 56 (receiving funding)
Response Complete (RC) Sites: 119
MR Sites: 0

DIFFERENT SITE TYPES:

2 Burn Areas	56 Contaminated Buildings
3 Contaminated Fill	2 Contaminated Groundwater
4 Contaminated Sediments	13 Surface Disposal Areas
6 Building Demolition /Debris Removal	6 Disposal Pits/Dry Wells
1 Firing Range	4 Landfills
1 Maintenance Yard	1 Oil/Water Separator
38 Storage Areas	1 Surface Impoundment/Lagoon
21 Spill Site Areas	4 Aboveground Storage Tanks
1 Underground Storage Tank	2 Waste Lines
3 Explosive Ordnance Disposal Areas	6 Waste Treatment Plants

CONTAMINANTS OF CONCERN: VOCs, SVOCs, Metals, Polychlorinated Biphenyl (PCBs), Benzo(a)Pyrene, Nitroaromatics, Propellants, Radiological Material, Pesticides

MEDIA OF CONCERN: Groundwater, Soil, Sediment, Surface Water

COMPLETED REM/IRA/RA:

For more details see the REM/IRA/RA section
REM - Money spent on Tanks from FY 91 to present
REM - FY92-95 Bottled Water to 2 off-site residences homeowner sampling water and waterline extension
REM- Soil Removal (1994)
IRA- FY 89-99 GW Pump & Treat Facility
REM- PCB Removal Bldg. 60

CURRENT (FY05) IRP PHASES (by funding):	RI/FS at 28 sites	IRA at 1 site	RD at 4 sites
	RA at 6 sites	RA(O) at 1 site	LTM at 12 sites
PROJECTED (FY06+) IRP PHASES (by funding):	RI/FS at 15 sites	IRA at 1 site	RD at 8 sites
	RA at 16 sites	RA(O) at 6 sites	LTM at 51 sites

IDENTIFIED POSSIBLE REM/IRA/RA:
IRA at PICA-076
RA at PICA-001, 002, 008, 013, 022, 058, 067, 071, 072, 076, 079, 102, 136, 163, 171, 175, 193, 195, 199, 205, 206, 209

DURATION:

Year of Inception:	1973
Year of RA Funded:	2010
Year of IRP Completion:	2033

Installation Information

SITE DESCRIPTION:

Picatinny Arsenal is a 6,500 acre government-operated munitions research and development facility located in Morris County, New Jersey, approximately 40 miles west of New York City and 4 miles northeast of Dover, New Jersey.

IRP EXECUTING AGENCIES:

Lead IRP Executor For Investigative Phase: Picatinny Arsenal
For Removal and Interim Actions: Picatinny Arsenal. Picatinny Arsenal was the "anchor site" for a five year Total Environmental Restoration Contract (TERC) through the Baltimore Corps of Engineers.

REGULATORY PARTICIPATION:

FEDERAL: U.S. EPA Region II, Federal Facilities Section, U.S. Fish & Wildlife Survey for Endangered Species
STATE: New Jersey Department of Environmental Protection (NJDEP), Bureau of Federal Case Management
LOCAL: Rockaway Township, County of Morris, Jefferson Township, Denville Township, the Morris County Planning Board, Wharton, Dover

REGULATORY STATUS:

- NPL installation
- IAG between EPA Region II and U.S. Army, IAG covers 3008(h) and 3004(u) requirements
- Established a Restoration Advisory Board (RAB) December 1995. Technical Review Committee (TRC) preceded from 1988 to 1995.
- Department of Defense/State Memorandum of Agreement (DSMOA) between New Jersey Department of Environmental Protection (NJDEP) and the Department of Defense (DOD)
- Federal Facility Compliance Agreement (FFCA) concerning Resource Conservation and Recovery Act (RCRA) closure since 1989
- Part B Permit under RCRA since 1991
- Hazardous and Solid Waste Amendment (HSWA) Permit with EPA February 3,2000. Essentially incorporates IAG.
- MOU between Picatinny Arsenal and NJDEP promoting innovative technology

MAJOR CHANGES TO IAP FROM PREVIOUS YEAR (2004):

-Site 20/24 RA completed except for wetland mitigation.
- EE/CA published and decision documen signed for lead removl action for six sites.
- Excavation of Bear Swamp Brook Sediments complete.
- Area D TCE Groundwater Proposed Plan public noticed in June 2003. ROD sent to regulators and Army for technical review in October 2003.
- Regulators approved PP for Green Pond Brook/ Bear Swamp Brook, Post Farm and Burning Grounds. These PP were public niticed in the fall and winter 2004.
- Submitted reports in Phase 1 2a/3a, Phase III 1a and Phase III 2a/3a.
- Submitted Site 180 FS after technical partnering.
- Submitted PP for Site 25/26, Area E Groundwater
- Consolidated sites for administrative purposes for the new data base.
- A decision was made not to continue the facilitation aspects for technical partnering.

Installation Description

DESCRIPTION:

Picatinny Arsenal is an active Army installation which is currently the home of U.S. Army Research Development and Engineering Command (ARDEC). Current activities are primarily research and development of weapon systems. At the present time, Picatinny Arsenal is not scheduled for closure. Picatinny Arsenal is being aggressive in leasing buildings to outside private industries. Picatinny is also in what is considered a "mini building boom."

HISTORY:

Picatinny Arsenal was established in 1880 by the U.S. War Department as a storage and powder depot. Later it was expanded to assemble powder charges for cannons and to fill projectiles with maximize (a propellant). During World War I (WWI), Picatinny Arsenal produced all sizes of projectiles. In the years following WWI, Picatinny Arsenal began projectile melt-loading operations and began to manufacture pyrotechnic signals and flares on a production basis. During World War II (WWII), Picatinny Arsenal produced artillery ammunition, bombs, high explosives, pyrotechnics, and other ordnance. After WWII, Picatinny Arsenal's primary role became the research and engineering of new ordnance. However, during the Korean and Vietnam conflicts, Picatinny Arsenal resumed the production and development of explosives, ammunition and mine systems.

In recent years, Picatinny Arsenal's mission has shifted to conducting and managing research development, life-cycle engineering, and support of other military weapons and weapon systems. The facility has responsibility for the research and development of armament items.

REGULATORY STATUS:

Picatinny Arsenal was placed on the NPL in March 1990 with a HRS score of 42.92. This score is based primarily on groundwater contamination from Building 24 (PICA Numbers 76 and 120), a former metal-plating operation.

The DOA and the EPA, Region II, signed an IAG in July 1991, which defines the objectives, responsibilities, procedural framework and deadlines for implementing the IRP at Picatinny Arsenal. The IAG incorporates all 3004(u) and 3008(h) responsibilities under the Solid Waste Disposal Amendments (SWDA) under RCRA.

The DOD and NJDEP signed a DSMOA in 1993. The NJDEP also provides technical comments and regulates aspects of the remedial actions through a permit-equivalent process and compliance with their two year Work Plan Table as required under the recent changes caused by developing of the funding and is consistent wit the guidance "Working Together to Achieve Cleanup: A Guide to the Cooperative Agreement Process," dated August 23, 1997.

On February 3, 2000, the U.S. Environmental Protection Agency put out to public notice the Hazardous and Solid Waste Amendments (HSWA) Permit which incorporates the Inter Agency Agreement (IAG) and requires Non-ERA eligible Solid Waste Management Units (SWMUs) sites to be incorporated into the permit. In 1999, a Memorandum of Understanding between Picatinny Arsenal and New Jersey Department of Environmental Protection promoting innovative technology was signed.

Contamination Assessment

The U.S. Army Environmental Center, formally U.S. Army Toxic and Hazardous Materials Agency (USATHAMA), Environmental Branch, conducted a record search of Picatinny Arsenal in July 1976. This report recommended that ground water quality data should be collected by Picatinny Arsenal at the locations where the groundwater leaves the Arsenal.

The U.S. Army Environmental Hygiene Agency (AEHA) performed a geohydrologic study of Picatinny Arsenal in May 1979 and found no gross contamination of existing drinking water wells. The study identified several areas of concern and recommended that an additional 19 wells be installed to monitor sites of concern and the Arsenal boundary.

The State of New Jersey performed a New Jersey Pollutant Discharge Elimination System (NJPDES) compliance inspection in July 1980, and found organic solvents being discharged from Buildings 24 and 95 (RI Concept No. 21/ PICA-120, RI Concept No. 37/ PICA-76, and RI Concept No. 22/ PICA-10, Building 24 contained a metal plating operation and Building 95 contained a circuit board etching operation.

In October 1980, AEC performed a reassessment of Picatinny Arsenal and found significant contamination associated with RCRA Site Building 24 and RCRA site Building 95. The U.S. Army recommended that a RCRA ground water assessment be completed. During the period January 1981 through August 1983, AEHA conducted a detailed ground water assessment. The investigation demonstrated that there were several monitoring wells in the vicinity of Buildings 24 and 95 which were highly contaminated with organic solvents, primarily TCE. The AEHA prepared a ground water quality assessment report documenting the investigation in February 1984. Picatinny Arsenal employed the U.S. Geological Survey (USGS) to perform the additional ground water investigation.

In February 1989, NJDEP completed a RCRA Facility Assessment (RFA). A total of fifty-five (55) solid waste management units were identified. Many of these sites were previously identified in other studies.

During a RCRA Compliance Evaluation Inspection (CEI) by the EPA in 1986 and 1987, at least thirty (30) additional sites were found where waste was handled and/or stored. Many of these sites were previously identified. In June 1988 Picatinny Arsenal began field work on a confirmation study. This study included ground water and/or soil sampling at thirty-five known or potentially contaminated areas. This study was completed and is considered to be a site investigation (SI) by the regulators.

In April 1988 Argonne National Laboratory (ANL) was tasked to prepare a comprehensive Remedial Investigation (RI) I Concept Plan to identify, prioritize and develop a plan of action for each site for the accomplishment of an overall RI. The RI Concept Plan addressed over 157 sites. The final version of the RI Concept Plan was published in March 1991 and approved by the EPA in October 1991

The investigative approach suggested by the RI Concept Plan, initiated by the Army and approved by the regulatory agencies in 1990 was to break the defined RI Concept Plan sites into Areas (A - P). These sixteen (16) RI Concept-defined areas were prioritized and divided into three phases of investigation called Phase I, II, and III. The investigation of the Burning Ground (PICA 002/RI-Concept Site 34 or Area A), however, was initiated before the approval and normalization of this approach..

This original approach was modified by the implementation of the DOD's Relative Risk Funding Policy. The goal of the relative risk policy is to attempt to address the worse sites first from a national or DOD perspective. According to the guidance, the investigative and remedial actions for sites with the highest relative-risk will be funded first with few exceptions.

To determine relative risk for each site, specific steps are required by the guidance. (Each step is applicable, when data exists, for the four different environmental media.) The media includes ground water, soils, sediments and surface water. The process includes the following steps:

1. Comparing individual chemical results on a site basis to contaminant hazard factors which are supplied by the guidance;

2. Determining a migration pathway factor (significant, moderate or minimal) based on DOD guidance; and

3. Determining the migration pathway factor (evident, potential or confined) based on DOD guidance.

The resultant calculation is then designated high ("1"), medium ("2") or low ("3") relative risk. The site will take the highest relative risk score of any one media. The relative risk score for each site also includes a factor as to whether there exists a regulatory agreement with schedules ("A" designation) or a regulatory agreement does not exist (a "B" designation). All the sites at Picatinny are under such a regulatory agreement with schedules and thus all ratings are designated as "A".

Relative risk is not an absolute expression of risk and is not a substitute for a baseline health risk assessment.

The Defense Site Environmental Restoration Tracking System (DSERTS) presently includes 175 sites for Picatinny

Arsenal. The DSERTS numbers are not consecutive and go from PICA-1 through PICA-210. These sites include the original sites listed in the RI Concept Plan plus additional sites identified after the RI Concept Plan was approved

One hundred fifty-four of the sites were originally identified in the RI Concept Plan. The other 21 sites were subsequently added. Those additional 21 sites were identified with DSERTS numbers higher than PICA 187. The additional 21 sites included 14 sites relating to "Other Buildings" for RI Concept Areas B - P. These sites were identified because of the potential that the contractor, Argonne National Laboratories, who developed the RI Concept Plan, did not assess or review all the available information on all the buildings at the Arsenal. However, after an evaluation, some of these "Other Buildings" sites were renamed as Area-wide Groundwater or specific sites. Additional "new" DSERTS sites also included specific locations such as Bear and Green Pond Brook and the firehouse. The 175 DSERTS sites are regularly updated in the DSERTS database.

At the Aug 2000, Apr 2001 and 2002 IAP meeting, it was agreed that sites be considered response complete (RC) based on the following:

1. Active Range, not ER-A eligible previously identified in the DSERTs database.

2. Active Range, not ER-A eligible, not previously identified in the DSERTs database.

3. Previously identified as RC based on fact assumed to be "No Further Action" now identified in Institutional Control Proposed Plan.

4. Combined with other sites such as PICA-120 now tied to PICA-076 and agreed to at meeting.

5. PICA 78 will be considered RC and any action will be incorporated into the other two (2) sites in the building 31/building 33 grouping. The RC is being done for administrative purposes.

6. Site investigation identified no areas of concern as discussed in the 1998 IAP and beyond.

7. PICA 63 (Site 20) was combined with PICA 66 (Site 24) for administrative purposes.

As a consequence of the agreements made at a series of meeting that occurred in calendar year 2003, Picatinny RI Concept Sites into PICA sites. The consolidation was agreed to by the regulators and AEC AEDB-R program managers. The consolidation was based on geographic attributes, similar schedules, and similar remedies. A major portion of the sites are expected to have only having only Institutional Controls as a remedy.

As the agreement now stands with EPA, each RI Concept Plan Site will go forward as noted in a letter to the regulators:

"This proposed consolidation will decrease the number of required estimates plus reduce the degree of other Army-funding related requirements for us. The shortcoming would be that we would have to coordinate the Record of Decisions for all the RI Concept Plans sites included in the grouped DSERTs site. This, I feel, should be no problem. EPA will note that this proposal will not affect the agreement in regard to conducting risk assessments per site nor will if affect the many Areas of Concern defined the Technical Regulations requires the NJDEP to regulate.

This proposal does (or should) not alter the number of Remedial Investigation Concept Plan Sites or the combined future costs for the actions[1] at those sites. The costs will now be combined in the consolidated site (most are predicted to be Land Use Controls). I have coordinated and worked with this proposal with the Army Environmental Center who manages the IRP funding."

The consolidation of PICA Sites is reflected as follows:

Pica #	RI Concept Plan Site #	RI Concept Plan Area	Site Description
29	**96**	G	**Waste Oil Storage**
121	95	G	Laundry for Explosively cont. clothes
89	52	G	Petroleum Leak Area
117	134	G	Maintenance and Service Shops
119	136	G	Metallurgy Lab
188	185	G	Laboratory
111	**142**	**F**	**Propellant Solvent Mixing**
113	144	F	Propellant Finishing
115	145	F	Powder Pressing
144	109	I	Pyrotechnic Plant
203	none	I	Former Poison Gas Lab

Contamination Assessment

Pica #	RI Concept Plan Site #	RI Concept Plan Area	Site Description
106	125	F	Lubricant testing
139	93	I	Ammunition Demo & Ordnance Facility
151	156	I	Ordance Facility
152	157	I	Ordance Facility
79	**40**	I	**Explosive Manufacturing WWT F**
53	**7**	N	**Munitions & Propellant Test Area**
56	10	N	Former Chemical Burial Area
64	147	I	Poach House
73	32	I	Storage Tanks
74	33	I	Spent Ethyl Alcohol Tanks
148	148	I	Change House
156	184	I	Refrig. And Inert Gas Bldgs.
85	**46**	**I**	**Engine Maintence Facility**
140	97	I	Engine Pump Maintence Bldg.
142	105	I	Propellant Plant
146	113	I	Propellant Plant
149	149	I	Propellant Plant
150	150	I	Propellant Plant
135	**71**	I	**General Purpose Lab**
137	82	I	X-Ray Photo Processing Lab
153	158	I	High-Explosive Magazine
154	159	I	Explosive Storage
52	6	L	Shell Burial Area
162	**5**	**L**	**Shell Burial Area**
104	111	F	Propellant Bagging Plant
107	138	F	Chemical Lab and Propellant Plant
108	**139**	F	**Propellant Processing**
109	140	F	Propellant Processing
138	90	G	Electromagnetic Gun Test Range
147	137	G	Waste Pit
210		G	Lab and Machine Shop
12	83	I	Physical Analytical Lab
18	30	I	Flourochemical Storage
134	**70**	I	**R&D Lab and Warehouse**
133	151	H	Change House
175	**115**	M	**Ordnance Facility Building**
178	152	M	Ordnance Facility Buildings
179	153	M	Ordnance Facility Building
180	154	M	Disassembly Building
75	**36**	L	**Waste Storage**
86	47	I	Heavy Equipment Maintenance
141	102	I	Barracks and Waste Oil
191	188	L	Coal Storage
159	172	K	Parking Lot
160	173	K	Chemical Lab
161	**174**	K	**Old Sewage Treatment Sludge Bed**
189	186	K	Firehouse
170	170	L	Propellant Melt-Pour
37	51	L	Haz. Waste Storage Tanks
167	167	L	Propellant Plant/Ordnance Facility
81	42	L	PCB storage Area
82	43	L	Pesticide Storage
164	103	L	Reservior near Bldg.3159
195	**77**	L	**Machine Shop**

Contamination Assessment

Pica #	RI Concept Plan Site #	RI Concept Plan Area	Site Description
80	41	L	Lab Pack Flammable Waste Storage
166	160	L	Ordnance Facility
165	114	L	Explosives Loading
7	1	J	Rocket Fuel Test Area (G-2 Area)
157	4	J	Rocket Motors Test Area
8	**2**	J	**Rocket Fuel Test Area (G-1 Area)**
91	**55**	**H**	**Machining of Explosives Facility**
127	127	H	Melt Casting Operation
128	128	H	Explosives Pressing Plant
130	130	H	Powder Press/Pelleting
123	62	H	Haz. Waste Storage
124	64	H	Load/Disassembly Plant
129	129	H	Change House
131	131	H	Ordinance Manufacture
125	98	H	Mine Assembly
126	100	H	Explosive Loading Facility
132	132	H	Explosive Press and Loading Facility
102	**61**	**F**	**Waste Dumping area behind Bldgs.**
103	104	F	Chemical Lab
22	**50**	I	**Haz. Waste Storage Tanks**
47	63/65	I	Steam Power Plant
145	110	I	Propellant Production
163	**91**	L	**Rocket Motor Assembly**
168	168	L	Propellant Press
169	169	L	Propellant Plants
21	35	L	Nitroglycerin Production
174	166	L	Propellant Plants
172	161	L	Nitration Building
171	**171**	L	**Ordnance Facility**
173	162	L	High Explosives Production
69	**27**	**P**	**Salt Storage Area**
185	119	P	Propellant Storage Buildings
186	120	P	Propellant Storage
187	121	P	Chemical Storage
208	none	P	DU Scrap Storage Area
116	101	G	Former Gas Station
72	**31**	**G**	**Blds 314, 3148E DRMO (Site 31)**

Note: The issue involving the enforceability of land-use controls that was in a Note of the October 2002 IAP has been resolved. The issue was between the EPA and DoD. Picatinny and USEPA Region II agreed to what is called “Navy approach” to the LUC issue. Any ROD will only mention and not detail land use controls. The details will be in more specified in the remedial design phase document. This remedial-design document will be a Land Use Control Implementation Plan (LUCIP).

Once the issue was resolved in early spring of 2003 Picatinny re-submitted and submitted 5 Proposed Plans during the period.

NJDEP has maintained its position that soils with levels of contamination above their Non-residential Direct Contact Soil Cleanup Criteria (NJNRDCSCC) need to be addressed with both institutional and engineering controls. The Army through General Geis’s letter included as an attachment to this IAP considers the NJNRDCSCC as only To-be-Considered and not ARARs. The NJDEP has agreed at a partnering meeting that existing vegetative covers of soils contaminated above their NJNJDSCC could be defined as an acceptable engineering control. The Army has agreed to propose and negotiate acceptable Institutional and/or engineering controls with the NJDEP on a case by case basis.

Previous Studies

Previous Studies as outlined by the Administrative files of Picatinny

File #	Title	Type of Document	Status	Date	Prepared by
Picatinny Site Profile (SP):					
Early Historic Background Reports					
SP1.1:07/16/96	Evaluation of Structures Built Prior to 1946 at Picatinny Arsenal	General Background	Revised Draft	Dec 94/ Nov 96	WCH Industries
SP1.1:06/16/98	Environmental Baseline Study for Picatinny Arsenal, Volume II	General Background (description of current activities at Picatinny Arsenal)		Dec-92	US Army Armament Munitions & Chemical Command Armament RDE Center
SP1.1:07/16/96	Historic Properties Report, Picatinny Arsenal, Dover, New Jersey	General Background	Final	Mar-85	Picatinny Arsenal
SP1.1:05/05/95	Reassessment of Picatinny Arsenal, 1983	Installation Assessment	Final Update of 1976 Installation Assessment	May-83	Chemical Systems Laboratory
SP1.1:10/7/99	Darcon Historic Building Inventory HABS/HABER Report (condensed version)	General Background		Aug-82	Picatinny Arsenal
SP1.1:06/16/98	HABRS/HAER Inventory Report (full report) DARCOM – Historic Building Inventory HABS/HAER Report	Detailed background of each building	Final	Probably 1982	Picatinny Arsenal
SP1.1:06/16/98	Technical Background and Terminology, HAER No. NJ-36	General Background – Info. on Explosives	typed report and separate document	Probably 1982	Picatinny Arsenal
SP1.1:10/7/99	Summary of Building History Area H	General Background		Probably 1982	Picatinny Arsenal
SP1.1:10/7/99	Summary of Building History Area I	General Background		Probably 1982	Picatinny Arsenal
SP1.1:10/7/99	Picatinny Arsenal Preliminary Field Investigation Findings/Recommendations Area H	General Background		Probably 1982	Picatinny Arsenal
SP1.1:07/12/96	The History of Picatinny Arsenal	General Background	Final	Mar 1931	Picatinny Arsenal
SP1.1:07/12/96	The History of Picatinny Arsenal 1880 – 1931, Vol 1	General Background	Final	March 31, 1931, Reissued	War Plans Division, Plant Engineering Department, PTA
General Reports					
SP1.1:9/15/98	Response to NJ Historic Preservation Office Review of Architectural Assessment of Historic Structures at Picatinny Arsenal, Morris County, NJ and Definition of Historic Districts for Picatinny Arsenal, Morris County, NJ	CERCLA – Architectural Assessment (Addendum)		Aug-98	Panamerican Consultants, Inc. Buffalo Branch Office, 36 Brunswick Road, Depew, NJ 14043
SP1.1:9/15/98	Field Inspection of 53 Areas Sensitive for Cultural Resources and Phase lB Archaeological Surveys of Eight Sensitive Areas at Picatinny Arsenal, Morris County, NJ	CERCLA	Draft	Apr-98	Panamerican Consultants, Inc.

Previous Studies

Previous Studies as outlined by the Administrative files of Picatinny

File #	Title	Type of Document	Status	Date	Prepared by
RCRA Background Reports – SP1.2 Series					
SP1.2:10/28/94	Environmental Remedial Actions, Building 519, at Picatinny Arsenal, Final Closure Plan	RCRA Background	Final	Sep-93	Roy F. Weston
SP1.2:07/14/96	Environmental Remedial Actions at Picatinny Arsenal Volumes I, II and III	RCRA Background, RCRA Closures, Site Wide Report	Final	1-Oct-91	Weston Services, Inc.
SP1.2:10/28/94	Resource Conservation and Recovery Act (RCRA Buildings to be Exempted and Closed, Part I, II and III, plus Appendices	RCRA Background	Final	Sep-88	
Site Wide - Installation Restoration Program Background Reports (SP1.3 Series)					
SP1.3:04/26/95	Installation Action Plan for Installation Restoration Program at U.S. Army Research, Development and Engineering Center (ARDEC), Picatinny Arsenal	General Background	Ongoing, Annual Report	Completed for Fiscal Years 1993, 1994, 1995, 1996, 1997, 1998, 1999, 200, 2001, 2002, Draft 2003	Picatinny Arsenal
Federal Facilities Agreement and Revisions – (SP1.4 Series)					
SP1.4:09/99	DSMOA – TWO YEAR WORKPLAN TABLE	CERCLA	Current	Sep-99	NJ Department of Environmental Protection
SP1.4:10/26/94	Federal Facility Agreement, Administrative Docket Number: II-CERCLA-FFA-001-04 (U.S. EPA and U.S. Army Armament Research Development and Engineering Center, aka Picatinny Arsenal aka Interagency Agreement	CERCLA, Legal, Regulatory Agreement	Final	Apr-91	US EPA
Installation Assessment Reports					
SP1.5:1/90	Installation Assessment Picatinny Arsenal, Morris County, NJ Volume 1 text, Volume 2 maps	CERCLA	Final	Mar-89	US EPA
Site Wide Preliminary Assessment/Site Wide Inspection Reports (SP1.6 Series)					
SP1.6:1/00	Picatinny Arsenal Facility-Wide Background Investigation	CERCLA	Final	May-02	IT Corporation
SP1.6:1/99	Picatinny Arsenal Facility-Wide Background Investigation Work Plan	CERCLA	Final	Nov-99	IT Corporation
SP1.6::01/99	Picatinny Arsenal Facility-Wide Quality Assurance Project Plan	CERCLA	Final, Revision 1	May-99	IT Group
SP1.6:9/25/98	Picatinny Arsenal Facility-Wide Field Sampling Plan	CERCLA Site Wide Report	Final	Sep-98	ICF Kaiser Engineers
SP1.6:2/19/98	Picatinny Arsenal Facility-Wide Health and Safety Plan, Volumes 1 and 2	Site Wide Report - CERCLA	Final	Feb-98	ICF Kaiser Engineers

Previous Studies

Previous Studies as outlined by the Administrative files of Picatinny

File #	Title	Type of Document	Status	Date	Prepared by
SP1.6:10/26/94	Remedial Investigation Concept Plan for Picatinny Arsenal Volumes 1 and 2	Site Wide Report	Final	Mar-91	Argonne National Laboratories
SP1.6:06/16/98	Environmental Remedial Actions at Picatinny Arsenal	Site Wide Report, Volume 1 - Visual Inspection and Records Review, Volume II - Work Plan, Volume III –	Final	21-Dec-90	Weston, Contract No. DACA87-90-C-0054
SP1.6:10/26/94	Site Investigation of Picatinny Arsenal, Volumes 1 and 2	Site Investigation	Final	Jul-89	Dames & Moore
Other Site-Wide Reports					
SP1.7.1.10: 2-14-03	Draft Classification Exception Area (CEA)	Permit	Draft Final	18-Nov-02	New Jersey Department of Environmental Protection
Correspondence and Comments to EPA					
SP1.8.1	Submittal of Response to EPA's Evaluation Evaluations of Picatinny's responses to EPA comments on the Phase III-1A RI Report	Letters	Ongoing	Oct-02	Picatinny Arsenal
SP1.8.1	Submittal of Response to EPA Comments on the Phase I 2A/3A Remedial Investigation Report (RI Report)	Letters	Draft Final	Sep-03	Picatinny Arsenal
SP1.8.1	Response to comments Final Fish Consumption Human Health Risk Assessment Report base on June 7th Meeting	Letters	Ongoing	17-Jun-03	Picatinny Arsenal
SP1.8.1	Submittal of Proposed Plan for Area B Groundwater	Letters	Ongoing	9-Jun-03	Picatinny Arsenal
SP1.8.1	Submittal of Data from Green Pond Brook in front of Site 78	Letters	Ongoing	9-Apr-03	Picatinny Arsenal
SP1.8.1	Submittal of green cover for 3 reports: 1. Site 16, Report, July 2002: No formal approval letter except IAG schedule – ongoing work in Phase II Additional Investigations. 2) Site 122 Removal Action Report: No formal approval letter except IAG schedule. FS is now considered to be the next step for this site. 3)Indiana Bat Report June 2002: EPA approves document, United States Fish and Wildlife survey accepts response to comments which requires no revision to the document.	Letters	Ongoing	9-Apr-03	
SP1.8.1	Correspondence and Comments to EPA Response top Comments on Site 34 Proposed Plan.	Letters	Ongoing	20-Mar-03	Picatinny Arsenal

Previous Studies

Previous Studies as outlined by the Administrative files of Picatinny

File #	Title	Type of Document	Status	Date	Prepared by
SP1.8.1	Correspondence and Comments to EPA: Minutes from Final March 4th and 5th Partnering meeting	Letters	Ongoing	27-Mar-03	Picatinny Arsenal
SP1.8.1	Correspondence and Comments to EPA: Request for a change in the submittal of Interim Groundwater	Letters	Ongoing	8-Apr-03	Picatinny Arsenal
SP1.8.1	Correspondence and Comments to EPA: comments on Phase III IA Remedial Investigation (RI) report	Letters	Ongoing	28-May-03	
Correspondence and Comments from EPA					
SP1.8.1	Correspondence and Comments to EPA	Letters	Ongoing	Prior to 1988 until	Picatinny Arsenal
Correspondence and Comments from EPA					
SP1.8.2	Correspondence and Comments from EPA: Additional Sites Remedial Investigation Report, Sites 3, 31, 192 and 199. EPA has completed its review of the above-reference report and comments are attached	Letters	Ongoing	27-Mar-03	U.S. Environmental Protection Agency
SP1.8.2	Correspondence and Comments from EPA: File Correspondence Phase III 1A Sites Remedial Investigation Report	Letters	Ongoing	18-Mar-03	U.S. Environmental Protection Agency
SP1.8.2	Correspondence and Comments from EPA	Letters	Ongoing	Prior to 1988 until Present	U.S. Environmental Protection Agency
Correspondence and Comments to DEP					
SP1.8.3	Correspondence and Comments to NJ Department of Environmental Protection: Modification to DEP of Environmental Protection Land Use Regulation Element Permit-Equivalent No. 4 (Hazardous Site Investigation and Cleanup) relating to Site 20/24	Letters	Ongoing	26-Mar-03	Picatinny Arsenal
SP1.8.3	Correspondence and Comments to NJ Department of Environmental Protection: Submittal of the Discharge Monitoring Report (DMR)	Letters	Ongoing	21-Mar-03	Picatinny Arsenal
SP1.8.3	Correspondence and Comments to New Jersey Department of Environmental Protection	Letters	Ongoing	Prior to 1988 until Present	Picatinny Arsenal

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File #	Title	Type of Document	Status	Date	Prepared by
Correspondence and Comments from DEP					
SP1.8.4	Correspondence and Comments from NJ Department of Environmental Protection: Area D and Area C Reporting Change Request	Letters	Ongoing	16-Apr-03	New Jersey Department of Environmental Protection
SP1.8.4	Correspondence and Comments from NJ Department of Environmental Protection	Letters	Ongoing	Prior to 1988 until Present	New Jersey Department of Environmental Protection
Guidance Documents (GD)					
GD 2.4:07/98	Installation Restoration Program Guidance	Guidance Document from HQ AMC	Current	Updated Annually	HQ AMC
Category Area A (AA), 3.0 = The Burning Ground					
AA3.1.9.:09/01	Picatinny Arsenal Task Order 17, Site 34, Feasibility Study Report	CERCLA	Final	Aug-01	IT Corporation
AA3.1.10:10/28/03	Final Site 34 Proposed Plan	CERCLA	Final	Sep-03	Shaw Environmental, Inc.
AA3.1.10:3/29/02	Picatinny Arsenal Task Order 17, Site 34, Proposed Plan	CERCLA	Draft Final	Mar-00	IT Corporation
AA3.1.6:04/28/95	Burning Ground Remedial Investigation Report (RI Concept Plan Site No.34 and Area A), Volumes I and II)	Remedial Investigation Report	Draft Final	Dec-94	Dames and Moore
AA3.1.1:10/25/94	Remedial Investigation/ Feasibility Study (RI/FS) of the Burning Ground at Picatinny Arsenal	Remedial Action	Final	Dec-92	Dames and Moore
	Part A, RI/FS Work Plan (AA3.1.1)				
	Part B, Field Sampling Plan (FSP) (AA3.1.2)				
	Part C, Quality Assurance Project Plan (AA3.1.3)				
	Part D, Health and Safety Plan (AA3.1.4)				
	Appendix B: U.S.G.S. Well Logs and Downhole Geophysical Logs				
AA3.1.8:10-27-94	Picatinny Arsenal Open Burn Area, Air Toxic Monitoring, 14-15 November 1990	Other Area A Related Reports – Investigative – Air	Final	May-91	Foster-Wheeler Enviresponse Inc.
Category = Phase I (PHI) - 4.0 Pertain to Areas B through G					
PHl4.1.1:10/27/94	Phase I Remedial Investigation/Feasibility Study (RI/FS) Picatinny Arsenal, New Jersey	Remedial Action	Final	Aug-93	Dames and Moore
	Part A, Work Plan (PH4.1.1)				
	Part B, Field Sampling Plan (PH4.1.2)				
	Part C, Quality Assurance Project Plan ((PH4.1.3)				
	Part D, Health and Safety Plan (PH4.1.4)				

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Previous Studies as outlined by the Administrative files of Picatinny

File #	Title	Type of Document	Status	Date	Prepared by
PHI4.1.1:10/27/94	TITLE: Phase I Remedial Investigation/Feasibility Study (RI/FS) Picatinny Arsenal, New Jersey	TYPE OF DOCUMENT: Remedial Action	Final	Aug-93	Dames and Moore
	Part A, Work Plan (PH4.1.1)				
	Part B, Field Sampling Plan (PH4.1.2)				
	Part C, Quality Assurance Project Plan ((PH4.1.3)				
	Part D, Health and Safety Plan (PH4.1.4)				
Chain of Custody Records; Validated Sampling Data					
PH14.1.5:4/99	Phase I, Remedial Investigation Report, Volume 14, Appendix D Data Validation Appendix E Physical Properties of Contaminants of Concern	CERCLA	Final	Apr-99	Dames & Moore
PHI4.1.5:10/27/94	Validated Sampling Data* from all Phase I Investigations and monitoring activities (including quarterly Groundwater Sampling Data from Interim Groundwater Remediation Project)	Chain of Custody Records/Validated Sampling Data	Final	1988 to Present	
Remedial Investigation Site Reports within Phase I					
PH14.1.1:4/98	Phase I Additional RI Sites 22, 44, 61, 104, 122, 135, 141 and 145, Volumes 1 & 2	CERCLA	Final	Sep-99	IT Corporation
PH14.1.1:6/99	Picatinny Arsenal Task Order 17, Phase I 2A/3A Sites Additional Investigation Work Plan	CERCLA	Draft Final	Aug-99	The IT Group
PH14.1.6:4/99	Phase 1 Remedial Investigation Report, Volume 1, Introduction and Area B	CERCLA	Final	Apr-99	Dames and Moore
PH14.1.6:06/2003	Phase 1 2A/3A Sites Remedial Investigation Report Volume 1	CERCLA	Final	Mar-03	Shaw Environmental, Inc.
PH14.1.6:7/10/98 (Vol 6A) Section 15, Conclusions and Recommendations	Phase 1 Remedial Investigation Report Volume 6A, Section 15, Conclusions and Recommendations	CERCLA	Draft Final	Dec-97	Dames and Moore
Phase I Risk Assessment Reports					
PHI4.1.7:08/00	Risk Management Plan for 9 Sites in the Phase I Area, Picatinny Arsenal, NJ		Draft Final	Aug-00	IT Group
PH14.1.7:4/99	Phase 1 Remedial Investigation Report, Volume 7, Ecological Assessment	CERCLA	Final	Apr-99	ICF Kaiser Engineers

Previous Studies

Previous Studies as outlined by the Administrative files of Picatinny

File #	Title	Type of Document	Status	Date	Prepared by
Treatability Studies in Phase I Area					
PHI4.1.9.1:10/8/02	Trichloroethylene Treatability Study Work Plan	CERCLA	Draft	Aug-02	PhA-Environmental Restoration
PHI4.1.9.1:01/2001	Iron Powder Demonstration Study: REO: Interim Status Report PTA Landfill Morris County, NJ	CERCLA (memorandum)		17-Jan-01	ARS Technologies Inc.
Proposed Plans					
PHI4.1.10:3/00	Institutional Control Proposed Plan For Soils at Sites: 19, 28, 44, 49, 86, 106, 124, 135, 141, 143, 163, 182 and 183 at Picatinny Arsenal	CERCLA	Final Rev 1	Jun-01	IT Group, Inc.
PHI4.1.10:5/99	Proposed Plan No Response Action with Existing Institutional Controls and Land Use Control Assurance Plan for Sites 19, 22, 28, 44, 49, 86, 1043, 106, 124, 135, 141, 143, 145 163, 182 and 183 at Picatinny Arsenal	CERCLA	Draft Final	May-99	ICF Kaiser Engineers
PH14.1.10:9/99	Compilation of Background Information and Existing Institutional Controls for Reference During Regulatory Review Proposed Plan – No Response Action with Existing Institutional Controls and LUCAP for Sites: 19, 22, 28, 44, 49, 86, 104, 106, 124,135,141, 143, 145, 163, 182 and 183	CERCLA	Draft Final	May-99	ICF Kaiser Engineers
Record of Decision					
PHI4.1.12:08/2001	Institutional Control Record of Decision for Soils at Sites 19, 28, 44, 49, 86, 106, 124, 135, 141, 143, 163, 182 and 183	CERCLA	Draft Final	Aug-01	IT Group
AREA B					
General Reports in Area B					
Remedial Investigation Report					
PH14.1.6:4/99	Phase 1 Remedial Investigation Report, Volume 1, Introduction and Area B	CERCLA	Final	Apr-99	Dames and Moore
Other Area B Reports, GW = Ground Water					
PH14.1.8.1.10:05/02 GW	Proposed Plan for Area B Groundwater Picatinny Arsenal NJ	CERCLA	Draft Final	May-02	Shaw Environmental & Infrastructure, Inc. (formerly IT Corporation)
PH14.1.8.1.9:4/99 GW	Area B Data Report/Groundwater Feasibility Study Data Gap Investigation, Volumes 1, Data Report Workplan	CERCLA	Final	Oct-99	IT Group

Previous Studies

Previous Studies as outlined by the Administrative files of Picatinny

File #	Title	Type of Document	Status	Date	Prepared by
PH14.1.8.1.9:4/99 GW	Area B Data Report, Groundwater Feasibility Study Data Gap Investigation, Volume 2, Appendices A-R	CERCLA	Draft Final	Apr-99	ICF Kaiser Engineers
Site 20/24 Pyrotechnical Range (20) and Sanitary Landfilll (24)					
PH14.1.8.1.1:9/03	Picatinny Arsenal Task Order 19 Addendum to the Remedial Action Work Plan for the Construction of a Soil Cap at Site 20/24 Pyrotechnic Testing Range	CERCLA	Draft Final	Jun-03	Shaw Environmental, Inc.
PH14.1.8.1.1:9/03	Picatinny Arsenal Task Order 19 Addendum to the Remedial Action Work Plan for the Construction of a Soil Cap at Site 20/24 Pyrotechnic Testing Range	CERCLA	Draft Final	Apr-03	Shaw Environmental, Inc.
PH14.1.8.1.1:3/19/02	Picatinny Arsenal Task Order 19 Remedial Action Work Plan for the Construction of a Soil Cap at Site 20/24 Pyrotechnic Testing Range	CERCLA	Draft Final	Feb-02	IT Group
PH14.1.8.1.10:05/01	TITLE: Proposed Plan for Site 20/24 Picatinny Arsenal, New Jersey	CERCLA	Final Rev #1	Jun-01	IT Group
PH14.1.8.1.9:11/03/99	Feasibility Study for Site 20/24 Picatinny Arsenal, NJ	CERCLA	Final	Mar-00	IT Group
PH14.1.8.1.1:6/23/98	Phase 1, Site 20/24 Data Report and Additional Investigation Work Plan – Picatinny Arsenal, Phase l	CERCLA	Final	May-98	ICF Kaiser Engineers
AREA C					
Area C Ground Water					
PH14.1.8.2.8 :02-14/03 GW	Task Order 17 Southern Boundary Fall 2002 Quarterly Ground Water Monitoring Report	CERCLA	Draft Final	Jan-03	IT Corporation
PH14.1.8.2.9:10/2003	Proposed Plan or Site 25/26 Soil Picatinny Arsenal, New Jersey	CERCLA	Draft Final	Oct-03	
PH14.1.8.2.9:06/2003	Feasibility Study for Site 25/26, Delivery Order 0017	CERCLA	Draft Final	Mar-03	U.S. Army Corps of Engineers Baltimore District
PH14.1.8.2.1:08/02 GW	Revised Work Plan for Lead Isotope Analysis For Area C Groundwater, Picatinny Arsenal, NJ	CERCLA	Final	Aug-02	Shaw Environmental & Infrastructure, Inc.
PH14.1.8.2.8:07/27/01 GW	Picatinny Arsenal Task Order 17, Area C Groundwater Data Report	CERCLA	Draft Final	Jul-01	IT Corporation

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Previous Studies as outlined by the Administrative files of Picatinny

File #	Title	Type of Document	Status	Date	Prepared by
Treatability Studies in Phase I Area					
PHI4.1.9.1:10/8/02	Trichloroethylene Treatability Study Work Plan	CERCLA	Draft	Aug-02	PhA-Environmental Restoration
PHI4.1.9.1:01/2001	Iron Powder Demonstration Study: REO: Interim Status Report PTA Landfill Morris County, NJ	CERCLA (memorandum)		17-Jan-01	ARS Technologies Inc.
Proposed Plans					
PHI4.1.10:3/00	Institutional Control Proposed Plan For Soils at Sites: 19, 28, 44, 49, 86, 106, 124, 135, 141, 143, 163, 182 and 183 at Picatinny Arsenal	CERCLA	Final Rev 1	Jun-01	IT Group, Inc.
PHI4.1.10:5/99	Proposed Plan No Response Action with Existing Institutional Controls and Land Use Control Assurance Plan for Sites 19, 22, 28, 44, 49, 86, 1043, 106, 124, 135, 141, 143, 145 163, 182 and 183 at Picatinny Arsenal	CERCLA	Draft Final	May-99	ICF Kaiser Engineers
PH14.1.10:9/99	Compilation of Background Information and Existing Institutional Controls for Reference During Regulatory Review Proposed Plan – No Response Action with Existing Institutional Controls and LUCAP for Sites: 19, 22, 28, 44, 49, 86, 104, 106, 124,135,141, 143, 145, 163, 182 and 183	CERCLA	Draft Final	May-99	ICF Kaiser Engineers
Record of Decision					
PHI4.1.12:08/2001	Institutional Control Record of Decision for Soils at Sites 19, 28, 44, 49, 86, 106, 124, 135, 141, 143, 163, 182 and 183	CERCLA	Draft Final	Aug-01	IT Group
AREA B					
General Reports in Area B					
Remedial Investigation Report					
PH14.1.6:4/99	Phase 1 Remedial Investigation Report, Volume 1, Introduction and Area B	CERCLA	Final	Apr-99	Dames and Moore
Other Area B Reports, GW = Ground Water					
PH14.1.8.1.10:05/02 GW	Proposed Plan for Area B Groundwater Picatinny Arsenal NJ	CERCLA	Draft Final	May-02	Shaw Environmental & Infrastructure, Inc. (formerly IT Corporation)
PH14.1.8.1.9:4/99 GW	Area B Data Report/Groundwater Feasibility Study Data Gap Investigation, Volumes 1, Data Report Workplan	CERCLA	Final	Oct-99	IT Group

Previous Studies

Previous Studies as outlined by the Administrative files of Picatinny

File #	Title	Type of Document	Status	Date	Prepared by
PHI4.1.1:10/27/94	TITLE: Phase I Remedial Investigation/Feasibility Study (RI/FS) Picatinny Arsenal, New Jersey	TYPE OF DOCUMENT: Remedial Action	Final	Aug-93	Dames and Moore
	Part A, Work Plan (PH4.1.1)				
	Part B, Field Sampling Plan (PH4.1.2)				
	Part C, Quality Assurance Project Plan ((PH4.1.3)				
	Part D, Health and Safety Plan (PH4.1.4)				
Chain of Custody Records; Validated Sampling Data					
PH14.1.5:4/99	Phase I, Remedial Investigation Report, Volume 14, Appendix D Data Validation Appendix E Physical Properties of Contaminants of Concern	CERCLA	Final	Apr-99	Dames & Moore
PHI4.1.5:10/27/94	Validated Sampling Data* from all Phase I Investigations and monitoring activities (including quarterly Groundwater Sampling Data from Interim Groundwater Remediation Project)	Chain of Custody Records/Validated Sampling Data	Final	1988 to Present	
Remedial Investigation Site Reports within Phase I					
PH14.1.1:4/98	Phase I Additional RI Sites 22, 44, 61, 104, 122, 135, 141 and 145, Volumes 1 & 2	CERCLA	Final	Sep-99	IT Corporation
PH14.1.1:6/99	Picatinny Arsenal Task Order 17, Phase I 2A/3A Sites Additional Investigation Work Plan	CERCLA	Draft Final	Aug-99	The IT Group
PH14.1.6:4/99	Phase 1 Remedial Investigation Report, Volume 1, Introduction and Area B	CERCLA	Final	Apr-99	Dames and Moore
PH14.1.6:06/2003	Phase 1 2A/3A Sites Remedial Investigation Report Volume 1	CERCLA	Final	Mar-03	Shaw Environmental, Inc.
PH14.1.6:7/10/98 (Vol 6A) Section 15, Conclusions and Recommendations	Phase 1 Remedial Investigation Report Volume 6A, Section 15, Conclusions and Recommendations	CERCLA	Draft Final	Dec-97	Dames and Moore
Phase I Risk Assessment Reports					
PHI4.1.7:08/00	Risk Management Plan for 9 Sites in the Phase I Area, Picatinny Arsenal, NJ		Draft Final	Aug-00	IT Group
PH14.1.7:4/99	Phase 1 Remedial Investigation Report, Volume 7, Ecological Assessment	CERCLA	Final	Apr-99	ICF Kaiser Engineers

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Previous Studies as outlined by the Administrative files of Picatinny

File #	Title	Type of Document	Status	Date	Prepared by
Correspondence and Comments from DEP					
SP1.8.4	Correspondence and Comments from NJ Department of Environmental Protection: Area D and Area C Reporting Change Request	Letters	Ongoing	16-Apr-03	New Jersey Department of Environmental Protection
SP1.8.4	Correspondence and Comments from NJ Department of Environmental Protection	Letters	Ongoing	Prior to 1988 until Present	New Jersey Department of Environmental Protection
Guidance Documents (GD)					
GD 2.4:07/98	Installation Restoration Program Guidance	Guidance Document from HQ AMC	Current	Updated Annually	HQ AMC
Category Area A (AA), 3.0 = The Burning Ground					
AA3.1.9.:09/01	Picatinny Arsenal Task Order 17, Site 34, Feasibility Study Report	CERCLA	Final	Aug-01	IT Corporation
AA3.1.10:10/28/03	Final Site 34 Proposed Plan	CERCLA	Final	Sep-03	Shaw Environmental, Inc.
AA3.1.10:3/29/02	Picatinny Arsenal Task Order 17, Site 34, Proposed Plan	CERCLA	Draft Final	Mar-00	IT Corporation
AA3.1.6:04/28/95	Burning Ground Remedial Investigation Report (RI Concept Plan Site No.34 and Area A), Volumes I and II)	Remedial Investigation Report	Draft Final	Dec-94	Dames and Moore
AA3.1.1:10/25/94	Remedial Investigation/ Feasibility Study (RI/FS) of the Burning Ground at Picatinny Arsenal	Remedial Action	Final	Dec-92	Dames and Moore
	Part A, RI/FS Work Plan (AA3.1.1)				
	Part B, Field Sampling Plan (FSP) (AA3.1.2)				
	Part C, Quality Assurance Project Plan (AA3.1.3)				
	Part D, Health and Safety Plan (AA3.1.4)				
	Appendix B: U.S.G.S. Well Logs and Downhole Geophysical Logs				
AA3.1.8:10-27-94	Picatinny Arsenal Open Burn Area, Air Toxic Monitoring, 14-15 November 1990	Other Area A Related Reports – Investigative – Air	Final	May-91	Foster-Wheeler Enviresponse Inc.
Category = Phase I (PHI) - 4.0 Pertain to Areas B through G					
PHl4.1.1:10/27/94	Phase I Remedial Investigation/Feasibility Study (RI/FS) Picatinny Arsenal, New Jersey	Remedial Action	Final	Aug-93	Dames and Moore
	Part A, Work Plan (PH4.1.1)				
	Part B, Field Sampling Plan (PH4.1.2)				
	Part C, Quality Assurance Project Plan ((PH4.1.3)				
	Part D, Health and Safety Plan (PH4.1.4)				

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File #	Title	Type of Document	Status	Date	Prepared by
RECEIVER: Administrative Records					
RI Report Area D & E					
PHI4.1.8.3.6:6/2003	Phase I 2A/3A Sites Remedial Investigation Report Volume 2, Area D Sites	CERCLA	Draft Final	Mar-03	Shaw Environmental, Inc.
PHI4.1.8.3.6:4/99	Phase I Remedial Investigation Report Volume 3, Study Area D and E	CERCLA	Final	Apr-99	Dames & Moore
Building 31 and 33					
PH14.1.8.3.6:04/02	Phase I & II Remedial Investigation Report, Buildings 31 and 33, Picatinny Arsenal, NJ Contract No. DAAE30-96-D-1026, D.O. 3	CERCLA	Final	Apr-00	Environmental Compliance, Inc.
PH14.1.8.3.1:02/4/9	Final Remedial Investigation Workplan Buildings 31 and 33 Picatinny Arsenal, New Jersey Contract Number DAAE30-96-D-1026, Delivery Order Three	CERCLA	Final	Feb-99	Environmental Compliance, Inc.
Site 122, Building 60					
PHI4.2.1.1:06/2003	Picatinny Arsenal Task Order 19, Site 122 (DSERTS #PICA011) PCB Soil & Sediment Removal Action Report	CERCLA	Final	Jun-03	Shaw Environmental, Inc.
PHI4.2.1.1:10/00	Picatinny Arsenal Task Order 19, Site 122 (DSERTS #PICA011) PCB Soil & Sediment Removal Action Report	CERCLA	Draft Final	Oct-00	IT Corporation
PH14.2.1.1:01/14/00	Picatinny Arsenal Task Order 19 Site 122 PCB Soil and Sediment Removal Action Work Plan	CERCLA	Final	Jan-00	IT Corporation
PH14.2.1.5:08/26/99	Picatinny Arsenal Task Order 19, Engineering Evaluation/Cost Analysis (EE/CA) Site 122, PCB Soils at Building 60/60A Area	CERCLA	Final	Sep-99	IT Corporation
Area E					
File No. 4.1.8.4 = Area E					
Ground Water Reports					
PHI4.1.8.4.9:10/03 GW	Proposed Plan for Area E Groundwater, Picatinny Arsenal, NJ.	CERCLA Report	Draft Final	Oct-03	Shaw Environmental, Inc.
PHI4.1.8.4.9:11/00 GW	Area E Groundwater Feasibility Study	CERCLA	Final	Nov-02	IT Corporation
PH14.1.8.4.1:7/06/99 GW	Area E Groundwater Feasibility Study Data Gap Investigation Workplan	CERCLA	Final	Jul-99	ICF Kaiser Engineers

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Previous Studies as outlined by the Administrative files of Picatinny

File #	Title	Type of Document	Status	Date	Prepared by
Other Area E Reports					
PH4.1.8.4.8:3/06/02	Draft Technical Report, Bench Scale Study for Innovative Technology Demonstration, Picatinny Arsenal/Range Safe	CERCLA	Draft	Mar-02	BEM Systems, Inc.
PHl4.1.8.4.1:4/99	Phase l Remedial Investigation Report Volume 3, Study Area D and E	CERCLA	Final	Apr-99	Dames & Moore
Area F					
Area F Reports					
PH14.1.8.5.6:6/2003	Phase I 2A/3A Sites Remedial Investigation Report, Volume 3, Area F Sites	CERCLA	Draft Final	Mar-03	Shaw Environmental, Inc.
PH14.1.8.5.6:4/99	Phase 1 Remedial Investigation Report, Volume 4, Study Area F	CERCLA	Final	Apr-99	Dames & Moore
Area G					
Area G Reports					
Bear Swamp Brook, Green Pond Brook Reports and Mid-Valley Ground Water Reports					
PH14.1.8.6.1:11/02 GW	Site 193, Bear Swamp Brook, Sediment Removal Action, Delivery Order 17	CERCLA	Draft Final	Apr-03	Shaw Environmental, Inc.
PH14.1.8.6.1:11/02 GW	Sampling Work Plan Site 193 – Bear Swamp Brook Sediment Retention Ponds Task Order 17	CERCLA	Final	Oct-02	IT Corporation
PH14.1.8.6.5.:06/02 GW	Engineering Evaluation/Cost Analysis (EE/CA) for the Removal and Disposal of the Sediment from the Retention Basins of Bear Swamp Brook, Picatinny Arsenal, NJ	CERCLA	Draft	Jun-02	Picatinny Installation Restoration Office
PHI4.1.8.6.10:06/2003	Proposed Plan for Green Pond and Bear Swamp Brooks, Picatinny Arsenal, NJ	CERCLA	Final	May-03	Shaw Environmental, Inc.
PHI4.1.8.6.10:/11/01 GW	Proposed Plan for Green Pond and Bear Swamp Brooks, Picatinny Arsenal, NJ	CERCLA	Draft Final	Dec-01	IT Corporation
PH14.1.8.6.9:3/9/00 GW	Picatinny Arsenal Green Pond Brook & Bear Swamp Brook Focused Feasibility Study, Task Order 17	CERCLA	Final	May-01	IT Corporation
PH14.1.8.6.1:10/03 GW	Mid-Valley Groundwater Investigation Data Gap Work Plan Picatinny Arsenal, NJ	Report	Final	Sep-03	Shaw Environmental, Inc.
PHl4.1.8.6.1:01/01	Mid-Valley Groundwater Investigation Work Plan Picatinny Arsenal, NJ		Draft Final	Jun-03	Shaw Environmental, Inc.

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Previous Studies as outlined by the Administrative files of Picatinny

File #	Title	Type of Document	Status	Date	Prepared by
PHI4.1.8.6.1:01/01	Mid-Valley Groundwater Investigation Work Plan Picatinny Arsenal, NJ		Draft Final	Jan-01	IT Group
Site Wide Reports within Area G					
PH14.1.8.6.6:06/2003	Phase I 2A/3A Sites Remedial Investigation Report, Volume 4 – Area G Sites	CERCLA Report	Draft Final	Mar-03	Shaw Environmental, Inc.
PH14.1.8.6.6:4/99	Phase I RI Report, Volume 5, Section 10 Study Area G	CERCLA	Final	Apr-99	Dames & Moore
PH14.1.8.6.6:7/9/98 (Vol 6) GW	Phase I RI Report, Volume 6, Sections 11 & 12, Study Area G Green Pond Brook and Fate and Transport	CERCLA	Final	Apr-99	Dames & Moore
DRMO					
PHI4.2.1.3:10/27/94	Non-Time Critical Removal Action Site Investigation Report of the DRMO (RI-Concept Site No. 31)	CERCLA Report	Final	Jul-94	Roy F. Weston
PHI4.2.1.1.8:04/026/95	Non-Time Critical Removal Action Preliminary Assessment for Unexploded Ordnance Area of the DRMO Yard (Site 31)	CERCLA Report	Final	Nov-93	Roy F. Weston
Category = Phase II (PHII) 5.0 - Areas H – K					
Phase II Site Wide or Combination of Some PII Sites Report					
PHII5.1.1:09/03	Picatinny Arsenal Task Order 19 Work Plan for the Investigation of Sumps and Dry Wells with Previously Identified COCs at Various Sites	CERCLA	Draft Final	Sep-03	Shaw Environmental, Inc.
PHII5.1.1:04/02	Picatinny Arsenal Task Order 19 Work Plan for the Investigation of Sumps and Dry Wells with Previously Identified COCs at Various Sites	CERCLA	Final	May-02	IT Corporation
PHII5.1.1:12/02	Picatinny Arsenal Task Order 17, Additional Site Investigations Remedial Investigation Report, Sites 3, 31, 192, and 199 Volume I	CERCLA	Draft Final	Nov-02	IT Corporation
PHII5.1.6:06/02	Picatinny Arsenal Task Order 5, Phase II Group 1 Sites, Remedial Investigation Report Sites 40, 93, 156 & 157 Volumes 1 through 7	CERCLA	Final	Jun-02	IT Corporation
PHII5.1.1:04/02	Picatinny Arsenal Task Order 19 Work Plan for the Investigation of Sumps and Dry Wells with Previously Identified COCs at Various Sites	CERCLA	Final	May-02	IT Corporation

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Previous Studies as outlined by the Administrative files of Picatinny

File #	Title	Type of Document	Status	Date	Prepared by
PHII5.1.7:12:00 *also listed under Risk Assessment Reports*	Picatinny Arsenal Phase II Sites Surface Water & Sediment Supplemental Human Health Risk Assessment		Final	Nov-01	IT Corporation
PHII5.1.6:12/00	Picatinny Arsenal, Delivery Order No.17, Phase II Group 3 Sites Remedial Investigation Report Sites 1, 2 & 4, Volumes 1 - 6	CERCLA	Final	Oct-01	IT Corporation
PHII5.1.7:4/01 HH	Picatinny Arsenal Task Order 17, Fish Collection and Human Health Risk Assessment Workplan; *also listed under Risk Assessment Reports*	CERCLA	Final	Jul-01	IT Corporation
PHII5.1.1:03/01	Indiana Bat Prey Tissue Sampling Workplan, Picatinny Arsenal New Jersey, Task Order 5	CERCLA	Final	Apr-01	IT Corporation
PHII5.1.1:10/99	Picatinny Arsenal Additional Site Investigations Sites 3, 31, 192, and 199 (Workplan)	CERCLA	Final	Nov-99	IT Corporation
PHII5.1.6:4/99	Phase II Remedial Investigation Report, Round 1, Volume 1	CERCLA	Draft Final	Apr-99	ICF Kaiser Engineers
PHII5.1.1:01/98 Group 1	Work Plan for Additional RI Investigation at Phase II, Group 1, Sites 40, 93, 156 & 157	CERCLA Report, consists of 4 sites located in Area I, West	Final	Feb-98	ICF Kaiser Engineers
PHII5.1.1:02/98 Group 3	Work Plan for Additional RI Investigation at Phase II, Group 3, Sites 1, 2, 4D & 4E	CERCLA Report, consists of sites located in Area J, south of Lake Denmark in the northeastern portion of PTA; includes Site 1 – Naval Air Rocket Test Station, Site 2, Bldgs 3500-3551, Reaction	Final	Feb-98	ICF Kaiser Engineers
PHII5.1.2:12/19/97	Ecological Field Sampling Work Plan Phase II Remedial Investigation/Feasibility Study, Picatinny Arsenal, New Jersey	CERCLA	Draft Final	12/19/1997	ICF Kaiser Engineers
PHII5.1.1:01/29/96	Picatinny Arsenal, Phase II Remedial Investigation/ Feasibility Study Work Plan, Final Report, December 1994, prepared by U.S. AEC Task Order No. 8, Contract No. DAAA15-91-D-0014.	CERCLA Report	Final	Dec-94	USAEC
PHII5.1.2:01/19/96	Picatinny Arsenal, Phase II Sampling and Analysis Plan and Quality Assurance Project Plan, Volume 1 and Volume II, Final Report	CERCLA Report	Final	Dec-94	USAEC
PHII5.1.4:01/19/96	Picatinny Arsenal, Phase II RI/FS, Final Health and Safety Plan	CERCLA Report	Final	Dec-94	USAEC

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Previous Studies as outlined by the Administrative files of Picatinny

File #	Title	Type of Document	Status	Date	Prepared by
Area H					
PHII5.1.8.1.6:4/99	Phase II Remedial Investigation Report, Round 1, Volume 2, Area H Sites	CERCLA	Draft Final	Apr-99	ICF Kaiser Engineers
PHII5.1.8.1:1 (*also listed under SP.1 Historic Background Studies)*	Summary of Building History Area H	General Background		Probably 1982	Picatinny Arsenal
RCRA Site Clearances Reports in Area H					
PHII5.1.8.1.8:01/18/96	Final Report and CERCLA Site Clearances for Building 537	CERCLA Report	Final	Jun-95	Carpenter Environmental Associates, Inc.
PHII5.1.8.1.8:01/22/96	Final Report and Appendices for CERCLA Site Clearances for Building 537	CERCLA Report	Final	Jun-95	Carpenter Environmental Associates, Inc.
PHII5.1.8.1.8:01/22/96A	Final Report and Appendix A, Volume I, CERCLA Site Clearances for Building 537	CERCLA Report	Final	Jun-95	Carpenter Environmental Associates, Inc.
PHII5.1.8.1.8:01/22/96B	Picatinny Arsenal, Appendix A, Volume II, CERCLA Site Clearances for Building 537	CERCLA Report	Final	Jun-95	Carpenter Environmental Associates, Inc.
Area I					
PHII5.1.8.2.6:4/99	Phase II Remedial Investigation Report, Round 1, Volume 3, Area I, No Further Action Sites	CERCLA	Draft Final	Apr-99	ICF Kaiser Engineers
PHII5.1.8.2.6:4/99	Phase II Remedial Investigation Report, Round 1, Volume 3 Area I IA Sites Recommended for Additional Investigation	CERCLA	Draft Final	Apr-99	ICF Kaiser Engineers
PHII5.1.8.2.6:4/99	Phase II Remedial Investigation Report, Round 1, Volume 3, Area I 2A/3A Sites Recommended for Additional Investigation	CERCLA	Draft Final	Apr-99	ICF Kaiser Engineers
Area J					
PHII5.2.8.3.6:03/03	Picatinny Arsenal Task Order 19, Site 16, Guncotton Line Investigation and Removal Action Report	CERCLA	Draft Final	Mar-03	Shaw Environmental, Inc.
PHII5.2.8.3.6:07/01	Picatinny Arsenal Task Order 19, Site 16, Guncotton Line Investigation and Removal Action Report	CERCLA	Draft Final	Jul-01	IT Corporation
PHII5.1.8.3.1:12/99	Picatinny Arsenal Task Order 19, Site 16 Guncotton Line Investigation Work Plan	CERCLA	Final	Mar-00	IT Corporation

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Previous Studies as outlined by the Administrative files of Picatinny

File #	Title	Type of Document	Status	Date	Prepared by
PHII5.1.8.3.6:4/99	Phase II Remedial Investigation Report, Round 1, Volume 4, Area J Sites	CERCLA	Draft Final	Apr-99	ICF Kaiser Engineers
PHII5.1.8.5.8:06/2003	Phase II Group 1 and Group 3 Sites, Groundwater summaries, Picatinny Arsenal, NJ, Task Order 17	CERCLA	Draft	Apr-03	Shaw Environmental, Inc.
Category = Phase III (PHIII) (6.0) - Areas L, M, N, O and P					
PHIII6.1.6:04/02	Picatinny Arsenal Task Order 17 Phase III – 1A Sites Remedial Investigation Report General Sections Volume 1, Binder 1	CERCLA	Draft Final	Apr-02	
PHIII6.1.1:09/03	Picatinny Arsenal Task Order 17 Phase III 2A/3A Sites Remedial Investigation Report, Volume 1, Volume 2 – Area L Sites, Volume 3 – Area M Sites,, Volume 4 – Area P Sites,	CERCLA	Draft Final	Sep-03	Shaw Environmental, Inc.
PHIII6.1.1:09/03	Picatinny Arsenal Task Order 17 Phase III 2A/3A Sites Remedial Investigation Report, Volume 5 – Appendices A-K (Binder 1), Appendix L, Human Health Risk Assessment (Binder 2), Appendices M-O (Binder 3)	CERCLA	Draft Final	Sep-03	Shaw Environmental, Inc.
PHIII6.1.1:06/22/00	Picatinny Arsenal Task Order 17 Phase III 2A/3A Sites Additional Investigation Workplan	CERCLA	Final	Jun-00	IT Corporation
PHIII6.1.1:9/98	Workplan Summary Investigation Tables for Phase III 1A Study Sites, Delivery Order 0017	CERCLA	Final	Sep-98	ICF Kaiser Engineers
Site Clearances					
PHIII6.1.8:01/19/96	Final Report and Appendices CERCLA Site Clearances, Pistol Range	Site Clearance for Proposed Pistol Range	Final - Proposed Pistol Range	Feb-95	Carpenter Environmental Assoc.
Chain of Custody Records/Validated Sampling Data					
PHIII6.1.5:05/03/95	Validated Sampling Data*	Sampling Data	Final	Jun-93	Veritech Environmental
Phase II EE/CA Report					
PHIII6.2.1.5:10-28.03	Lead Engineering Evaluation/Cost Analysis (EE/CA) for Soil Removal at Sites 139, 142, 209 (Building 430), 209 (Former Building 303), 161, and 171 at Picatinny Arsenal	Environmental Evaluation/Cost Analysis (EE/CA)	Draft Final	Jun-03	US EPA

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Previous Studies as outlined by the Administrative files of Picatinny

File #	Title	Type of Document	Status	Date	Prepared by
PHIII6.2.1.5:08-14.95	Engineering Evaluation/Cost Analysis for a Non-Time Critical Removal Action for Radium, Strontium and Depleted Uranium Contaminated Soils at Picatinny Arsenal	Environmental Evaluation/Cost Analysis (EE/CA)	Final	CREATION DATE: June 25, 1995	Health Physics Office and the Installation Restoration Program Office of the Public Safety and Environmental Affairs Office and of Picatinny Arsenal, NJ with Support From Radiation Waste Disposal Office of the Industrial Operations Command, Army Materiel Command, Rock Island, IL with Allied Technology Group
Area L					
PHIII6.1.8.1.6:11/02 GW	Picatinny Arsenal Task Order 17 Phase III – 2A/3A Sites, Remedial Investigation Report, Volume 2 - Area L Sites	CERCLA	Draft Final	Sep-03	
PHIII6.1.8.1.6:11/02 GW	Picatinny Arsenal Task Order 17 Phase III – 1A Sites, Remedial Investigation Report, Area L, Volume 2, Binder 3 (Sites 43, 91, 103, 161, 168 Groundwater Assessment)	CERCLA	Draft Final	Oct-02	
PHIII6.1.8.1.6:11/02	Picatinny Arsenal Task Order 17 Phase III – 1A Remedial Investigation Report, Area L, Volume 2, Binder 2 (Sites 5, 6, 18, 35, 167)	CERCLA	Draft Final	Oct-02	
PHIII6.1.8.1.8:01/98	Preliminary Assessment/Site Inspection Report for Non-Evaluated Phase III RI Concept Plan Sites and Additional Sites within RI concept Plan Area L, Volume 1, Sites with Recommendations For No Further Action, and Volume 2, Sites with Recommendations for Further Action	CERCLA, Site Inspection Report which presents results of PA/SI performed at PA in 1996.	Draft Final	Jan-98	ICF Kaiser Engineers
Building 1363A and 1373					
PHIII6.2.8.1.6.:01/29/96	Final Summary Removal Report for Non-Time Critical Removal Actions at Buildings 1363A and 1373, RI Concept Area L, Picatinny Arsenal, NJ	CERCLA	Final	Sep-95	
PHIII6.2.8.1.5.08-14.95	Non-Time Critical Removal Action Site Investigation Report and Engineering Evaluation/Cost Analysis at Building 1363A and 1373, RI Concept Area L, Picatinny Arsenal, New Jersey	Environmental Evaluation/Cost Analysis (EE/CA) for Buildings 1363A and 1373, CERCLA Document	Final	6/1/1995	Carpenter Environmental Associates, Inc.

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File #	Title	Type of Document	Status	Date	Prepared by
PHIII6.2.8.1.5:01/29/96	Final Engineering Evaluation/Cost Analysis Report for Buildings 1363A and 1373	CERCLA	Final	Jun-95	Carpenter Environmental Associates, Inc.
PHIII6.1.8.1.5:01/29/96	Appendix A, Volume II, SI (Site Investigation) Report and EE/CA (Engineering Evaluation/Cost Analysis) at Buildings 1363A and 1373	CERCLA	Final	Jun-95	Carpenter Environmental Associates, Inc.
PHIII6.1.8.1.8:01/29/96A	Appendix B and C, Volume I, SI Report and EE/CA at Buildings 1363A and 1373	CERCLA	Final	Jun-95	Carpenter Environmental Associates, Inc.
PHIII6.1.8.1.5:05/95	Appendix C, Volume II and EE/CA at Buildings 1363A and 1373	CERCLA	Final	Jun-95	Carpenter Environmental Associates, Inc.
PHIII6.1.8.1.5:01/29/96.C	Appendix D, Volume II and EE/CA at Buildings 1363A and 1373	CERCLA	Final	Jun-95	Carpenter Environmental Associates, Inc.
Northern Tetry Pits Reports					
PHIII6.2.1:09/01	Picatinny Arsenal Task Order 19, Site 17, (DSERTS #PICA 001) Northern Tetryl Pits, Explosive Soil Removal and Treatment Action Work Plan	CERCLA	Final	Oct-01	IT Corporation
PHIII6.1.8.1.5:02/01	Picatinny Arsenal Task Order 19, Engineering Evaluation/Cost Analysis – Remedial Action to Treat Tetryl in Soil from the Northern Tetryl Pits at Site 17	CERCLA	Pre Final	Mar-01	IT Corporation
Area N					
PHIII6.1.8.3.6:04/02	Picatinny Arsenal Task Order 17 Phase III – 1A Sites, Remedial Investigation Report, Area N – Site 10 Volume 3, Binder 4	CERCLA	Draft Final	Apr-02	
Area O					
PHIII6.1.8.4.6:04/02	Picatinny Arsenal Task Order 17 Phase III – 1A Sites Remedial Investigation Report Area O – Site 54 Volume 4, Binder 5	CERCLA	Draft Final	Apr-02	
Lake Denmark Reports					
PHIII6.1.8.4.7.1:07/20/00	Screening-Level Ecological Risk Assessment Site 54 – Lake Denmark Remedial Investigation/Feasibility Study, Picatinny Arsenal, NJ	CERCLA	Draft Final	Jul-00	IT Corporation

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File #	Title	Type of Document	Status	Date	Prepared by
Area P					
PHIII6.1.8.5.6:1/02	Picatinny Arsenal Task Order 17, Phase III 1A Sites, Remedial Investigation Report, Area P, Volume 5, Binder 6	CERCLA	Draft Final	May-02	
Category 4.2.2.10 = Permits					
PHI4.2.2.10.4 :02-14-03	Application for a Stream Encroachment Permit (equivalent) & Statewide General Permit (equivalent) No. 4 for sediment Removal from Bear Swamp Brook Sedimentation Ponds	Permit Application	Draft Final	Jan-03	New Jersey Department of Environmental Protection
PHI4.2.2.10.1.05-03-95	NJ Pollutant Discharge Elimination System/Discharge to Groundwater (NJPDES/DGW) Permit Equivalency (PEQ)	Permit Application	Final	January 27, 1992; expires 7/31/03 new permit TBR	New Jersey Department of Environmental Protection
PHI4.2.2.10.1.2:05/03/95	NJ Pollutant Discharge Elimination System/Discharge to Groundwater (NJPDES/DGW) Permit Equivalency (PEQ) for Surfactant Injection Study	Permit	Final	10/24/1994	New Jersey Department of Environmental Protection
PHI4.2.2.10.2:05/05-95	Water Allocation Permit Equivalency No. 2450E (formerly 2403P)	Permit	STATUS: Final - Ongoing	2/24/1994	New Jersey Department of Environmental Protection
PHI4.2.2.10.3.05/03/95	Air Permit Log No. 01-90-2140 (Permit to Construct, Install or Alter Control Apparatus or Equipment)	Permit	Final	revised January 2, 1991	New Jersey Department of Environmental Protection
Category 4.2.2.11 = Monitoring Reports Associated with Permits					
PHI4.2.2.11.1.10-28-2003	Chronic Toxicity Testing for Discharge Monitoring Reports (DMR) for Permit Equivalent for Interim Action Pump and treat Picatinny, NY	Monitoring Data from Interim Groundwater Remediation Project	Ongoing	Monthly	Shaw Environmental, Inc.
PHI4.2.2.11.1.04-18-2003	Discharge Monitoring Reports(DMR) for Permit Equivalent for Interim Action Pump and treat Picatinny, NJ	Monitoring Data from Interim Groundwater Remediation Project	Ongoing	Monthly	Shaw Environmental, Inc.
PHI4.2.2.11.1.10-28-94	Discharge Monitoring Reports for NJPDES/DGW Permit Equivalency	Monitoring Data from Interim Groundwater Remediation Project	Ongoing	Monthly	Metcalf & Eddy; Dow Environmental; Shaw Environmental & Infrastructure, Inc.
PHI4.2.2.11.2.05-10-03	Water Diversion Reports for for 3rd quarter 2003 for the Interim Action Pump and treat Picatinny, NJ	Monitoring Data from Interim Groundwater Remediation Project	Ongoing	Quarterly	Shaw Environmental & Infrastructure, Inc.

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File #	Title	Type of Document	Status	Date	Prepared by
PHI4.2.2.11.2.05-03-95	Water Diversion Reports for Water Allocation Permit No. 2450E	Monitoring Data from Interim Groundwater Remediation Project	Ongoing	Quarterly	Metcalf & Eddy; Dow Environmental; Shaw Environmental & Infrastructure, Inc.
PHI4.2.2.11.3.10-03	Submittal of the 3rd quarter 2003 Air Permit-Equivalent Log No. 01-90-2140, stack 049, Certificate 098726, APC #25005, CERCLA	Monitoring Data from Interim Groundwater Remediation Project	Ongoing	Quarterly	AWD Technology; Shaw Environmental & Infrastructure, Inc.
PHI4.2.2.11.3.10-28-94	Report for Air Permit-Equivalent Log No. 01-90-2140	Monitoring Data from Interim Groundwater Remediation Project	Ongoing	Quarterly	AWD Technology; Shaw Environmental & Infrastructure, Inc.
PHI4.2.2.11.3.04-18-2003	Submittal of the first quarter 2003 Air Permit, Equivalent Log no. 01-09-2140, Stack 049, Certificate 098726, APC # 25005	Air Permit	Ongoing	Quarterly	Shaw Environmental, Inc.
Category = Ground Water Studies and Well Drilling Programs at Picatinny Arsenal (GW)					
GW = Ground Water; PHIII = Phase III					
GW:PHIII:08/02	Sampling Work Plan Site 193 Bear Swamp Brook Sediment Retention Ponds Task Order 17	CERCLA	Draft Final	Aug-02	Shaw Environmental & Infrastructure, Inc.
GW:08/02	Revised Work Plan for Lead Isotope Analysis For Area C Groundwater, Picatinny Arsenal, NJ	CERCLA	Final	Aug-02	Shaw Environmental & Infrastructure, Inc.
GW:05/02	Proposed Plan for Area B Groundwater Picatinny Arsenal NJ	CERCLA	Draft Final	May-02	Shaw Environmental & Infrastructure, Inc. (formerly IT Corporation)
GW:03/02	Area B Groundwater Feasibility Study, Volume 1 Report, Volume 2 Appendices	CERCLA	Final	Apr-02	IT Corporation
GW:10/02 *(see also under human health reports)*	Picatinny Arsenal Phase II Sites Surface Water & Sediment Supplemental Human Health Risk Assessment		Final	Nov-01	IT Corporation
GW:07/01	Picatinny Arsenal Task Order 17, Area C Groundwater Data Report	CERCLA	Draft Final	Jul-01	IT Corporation
GW:06/01	Area D Groundwater Feasibility Study, Report of Model Re-Calibration and Cost Analysis	CERCLA	Draft Final	Jul-01	IT Corporation
GW:01/01	Picatinny Arsenal RCRA Subpart X Permit Monitoring Summary of Groundwater Sampling Results from February 1999 to October 2000, Task Order 0027	CERCLA	Final	Jan-01	IT Corporation
GW:07/00	Area E Groundwater Feasibility Study	CERCLA	Draft	Aug-00	IT Corporation
GW:7/99 (referenced also in Area E Phase I Documents)	Area E Groundwater Feasibility Study Data Gap Investigation Workplan	CERCLA	Final	Jul-99	ICF Kaiser Engineers

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Previous Studies as outlined by the Administrative files of Picatinny

File #	Title	Type of Document	Status	Date	Prepared by
GW:12/98	Work Plan for Areas F and G Groundwater Remedial Investigation, Task Order 0017	CERCLA	Final	Dec-98	ICF Kaiser Engineers
GW:10/1997	Picatinny Arsenal Area D Groundwater Feasibility Study, Volume 1A – Data Gap Work, Volume 1B Data Gap Workplan	CERCLA	Draft Final	Oct-97	ICF Kaiser Engineers
GW:10/97	Picatinny Arsenal Area D Groundwater Feasibility Study Data Gap Work Plan, Delivery Order 007, Volume 1B Data gap Workplan Sections 4, 5, 6 and 7	CERCLA	Draft Final	Oct-97	ICF Kaiser Engineers
GW PHI 1.7.12:6-23-98	RCRA Building 95 Impoundments Groundwater Monitoring Results Sampling of June 25, 1993	CERCLA		1995	Northeastern Analytical Corporation
GW:10/94	RCRA Groundwater Monitoring Plan Building 95 Surface Impoundments	RCRA	Final	Jan-94	Carpenter Environmental Associates Inc.
GW:6/98	Sampling and Analysis and Quality Assurance/Quality Control Plan, Interim Groundwater Remediation, Picatinny Arsenal, NJ	CERCLA Report	Draft Final, Rev. 3	Feb-91	
GW.1.7.5:05-03-95	Final Report, Well Drilling/Installation and Sampling Analysis, Southwest Boundary Well Clusters, Picatinny Arsenal, NJ	Site Investigation (companion document to Site Investigation Report)	Final	Jul-89	Dames and Moore
U.S. Geological Survey Reports					
GW:6/98	Analysis of Ground-Water Flowpaths Near Water Supply Wells, Picatinny Arsenal, NJ	CERCLA	Final	1997	U.S. Geological Survey Water-Resources Investigations Report 96-4228
GW:6/98	Hydrogeology of and Simulation of Ground-Water Flow at Picatinny Arsenal	Ground Water Report	Final	1996	U.S. Geological Survey, Water Resources Investigation, 96-4061
GW:10/94	Hydrology of and Water Quality In The Open Burning Area and Vicinity, Picatinny Arsenal, NJ, 1989-90, Water Resources Investigation Report 92-4134	Other Area A Related Reports – Investigative - Ground Water	Final	1994	U.S. Geological Survey
GW:6/98	Contamination of Shallow Groundwater in the Area of Building 95, Picatinny Arsenal, NJ, 1985-90, Water Resources Investigation Report No.: 92-4122	CERCLA	Final	data for study was completed in 1990	U.S. Geological Survey
GW:04/97	Streamed-Material Characterizations and Surface Water Quality, Green Pond Brook and Tributaries, Picatinny Arsenal, NJ 1983-90	Ground Water Report	Final	study ended in year 1990	U.S. Geological Survey, Water Resources Investigation Report 95-4246

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File #	Title	Type of Document	Status	Date	Prepared by
GW:10/94	Assessment of Contamination of Groundwater and Surface Water in the Area of Building 24, Picatinny Arsenal, NJ 1986-87, Water-Resources Investigations Report 90-4057	Remedial Action	Final	1990	U.S. Geological Survey
GW:10/94	Ground Water Quality Data for Picatinny Arsenal, NJ, 1958-85	Ground Water Report	Final	1986	U.S. Geological Survey
GW:10/94	Description and Results of Test Drilling Program at Picatinny Arsenal, NJ 1982-84	Site Wide Report	Final	1986	U.S. Geological Survey
GW:04/95	Determination of Geohydrologic Framework and Extent of Ground-Water Contamination Using Surface Geophysical Techniques at Picatinny Arsenal, NJ; Water Resources Investigation Report 86-4051	Site Wide Report	Final	1986	U.S. Geological Survey
Wells					
Well:01/96	Evaluation of the Effect of Extraction Well Withdrawals on a Trichloroethylene Plume in Ground Water Near Building 24, Picatinny Arsenal	CERCLA	Final	1995	U.S. Geological Survey
Category = Health Assessments (H)					
8 = Health Assessments; HH = Human Health Reports					
FILE NUMBER: (HH) 8.3:12/02	TITLE: Picatinny Arsenal Task Order 17, Phase I 2A/3A Remedial Investigation Report, Volume 6 – Human Health Risk Assessment (site 60, 142, 185, 187, 209, and 210) Appendix Q	CERCLA	Draft Final	Mar-03	Shaw Environmental, Inc.
(HH) 8.3:12/02	Picatinny Arsenal Task Order 17, Phase I 2A/3A Remedial Investigation , Volume 7 – Human Health Risk Assessment (Site 101, 118, 126, 136, 139, 146) Appendix R	CERCLA	Draft Final	Mar-03	Shaw Environmental, Inc.
(HH) 8:12/02	Additional Site Investigations (Orchard) Sites 3, 31, 192 & 199 Remedial Investigation Report Volume 3, Human Health Risk Assessment Appendix M	CERCLA	Draft	Aug-02	IT Corporation
(HH) 8:6/02	Picatinny Arsenal Task Order 17, Fish Consumption Human Health Risk Assessment Report	CERCLA	Draft Final	Jun-02	IT Corporation

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File #	Title	Type of Document	Status	Date	Prepared by
(HH) 8:2/03	Picatinny Arsenal Phase II Sites Surface Water & Sediment Supplemental Human Health Risk Assessment *(see also in GW documents)*		Final	Nov-01	IT Corporation
(HH) 8:5/01	Picatinny Arsenal Task Order 17, Fish Collection and Human Health Risk Assessment Workplan	CERCLA	Draft Final	Apr-01	IT Corporation
(HH) 8:5/01	Picatinny Arsenal Phase III-1A Human Health Risk Assessment Approach	CERCLA	Final	Apr-01	IT Corporation
(HH) 8:4/99	Phase 1 Remedial Investigation Report, Volume 8, Human Health Assessment	CERCLA	Draft Final	Apr-99	Dames & Moore
U.S. Department of Health and Human Services Reports Agency for Toxic Substances and Disease Registry (ATSDR) (previously					
(HH) 8	Public Health Assessment for Picatinny Arsenal (US Army) Dover, Morris County, NJ, CERCLIS NO NJ3210020704	CERCLA	10/4/2000		ATSDR
(HH) 8	Health Consultation, Review of Picatinny Arsenal PCB Health Risk Assessment Assumptions, Picatinny Arsenal, Dover, Morris County, NJ CERCLIS NO NJ3210020704	CERCLA	1/21/1999		ATSDR
AEHA Reports					
AEHA (H) 8:05/95	U.S. Army Environmental Hygiene Agency, Health Risk Assessment Study No. 39-26-L172-92, ARDEC, Picatinny Arsenal, NJ	Health Study	Final	Apr-92	AEHA
AEHA (H) 8:05/95	U.S. Army Environmental Hygiene Agency, Health Risk Assessment Study No. 39-26-L172-91, ARDEC, Picatinny Arsenal, NJ	Health Study	Final	Jul-91	AEHA
AEHA (H) 8:05/95	U.S. Army Environmental Hygiene Agency, Health Risk Assessment Study No. 39-26-L172-91, ARDEC, Picatinny Arsenal, NJ	Health Study	Final	Apr-91	AEHA
AEHA (H) 8	Final Report, Ground-Water Quality Assessment No. 38-26-0153-84, ARRACDEN Picatinny Arsenal Support Activity, Dover, NJ	Ground Water Report, Health Assessment	Final	Jan-84	U.S. Army Environmental Agency
AEHA (H) 8	Phase 1, Ground Water Quality Assessment No. 38-260153-82, Picatinny Arsenal, Dover NJ	Ground Water Report, Site Wide Investigation	Final	Jul-81	U.S. Army Environmental Hygiene Agency
AEHA (H) 8	Geohydrologic Consultation No. 31-24-0191-79	Health Assessment	Final	Jul-79	U.S. Army Environmental Hygiene Agency

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Previous Studies as outlined by the Administrative files of Picatinny

File #	Title	Type of Document	Status	Date	Prepared by
Category = Off-Post Actions (OP):					
OP7.1.1.05-05-95	Decision Document, Picatinny Arsenal Off-Post Alternate Water Supply	Decision Document	Final	Sep-92	
Category = Public Participation (PP):					
PP9.10.1	Picatinny Arsenal Restoration Advisory Board (PAERAB) Charter	Public Participation	Final	Aug-96	PAERAB
PP9.10.2	Picatinny Arsenal Restoration Advisory Board (PAERAB) Meeting Minutes	Public Participation	Final	Ongoing	Recording Secretary
PP9.10.3	Community Involvement Response Plan	Public Participation	Final	Apr-98	Picatinny Arsenal
PP9.1.10-27-94	USATHAMA Public Involvement and Response Plan for Picatinny Arsenal	Public Participation	Final	Sep-89	Environmental Science and Engineering
PP9.2.1.10-27-94	Technical Review Committee (TRC) Charter	Public Participation	Final	1990	
PP9.2.2.10-27-94	Technical Review Committee (TRC) Meeting Minutes	Public Participation	January 1989 to present; quarterly meeting	Ongoing	
PP9.3.05-03-95	Newspaper Clip File	Public Participation	1989 to present	Ongoing	
PP9.4.05-03-95	Public Notices	Public Participation		Ongoing	
File Nos. 9.6 = Public Meeting Transcripts					
Transcript Burning Ground Incinerator					
PP9.6	Transcript of Proceedings, Public Meeting, Hilton Garden Inn, Rockaway, NJ 07885, February 28, 2003	CERCLA	Final	Feb-03	A.R.T. Agency, Inc.
PP9.6	Transcript of Proceedings, Public Meeting, Wharton Public Library, Wharton, NJ 07885, February 8, 2001	CERCLA	Final	Feb-01	A.R.T. Agency, Inc.
Transcript on Proposed Interim Remedial Action Plan for Control of Migration of Contaminated Groundwater in the Building 24					
PP9.6	Transcript of Public Meeting on a Proposed Interim Remedial Action Plan for Control of Migration of Contaminated Groundwater in the Building 24 Area of Picatinny Arsenal	Transcropt	Final	9/25/1989	
Correspondence with Public					
File No. 9.7.1 = Correspondence with Private Well Owners					
PP9.7.1:04/95	Correspondence with Private Well Owners	Letters		Ongoing	Public/Picatinny

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Previous Studies as outlined by the Administrative files of Picatinny

File #	Title	Type of Document	Status	Date	Prepared by
File No. 9.7.2 = Correspondence with Organizations/Individuals					
PP9.7.2:04/95	Correspondence with Organizations/Individuals	Letters		Ongoing	Public/Picatinny
File Nos. 9.9 = Fact Sheets					
PP9.9.1:04/95	Fact Sheet No. 1, Environmental Cleanup at Picatinny Arsenal	CERCLA	Final	Dec-94	IT Corporation, Knoxville
PP9.9.2:4/95	Fact Sheet No. 2, Public Participation in Picatinny Arsenal Environmental Cleanup	CERCLA	Final	Dec-94	IT Corporation, Knoxville
PP9.9.3:4/95	Fact Sheet No. 3, Environmental Investigation Expedited at the Arsenal Burning Ground	CERCLA	Final	Dec-94	IT Corporation, Knoxville
PP9.9.4:2/96	Fact Sheet No. 4, The Information Repositories and Administrative Record	CERCLA	Final	1996	IT Corporation
PP9.9.5:02/96	Fact Sheet No. 5, IRP/CERCLA Documents	CERCLA	Final	1996	IT Corporation
PP9.9.6:2/96	Fact Sheet No. 6, Air Sampling Survey	CERCLA	Final	1997	ICF Kaiser Engineers
PP9.9.7	Fact Sheet on Technical Assistance for Public Participation	CERCLA	Final		Picatinny Arsenal
PP9.9.8:2/03	Fact Sheet No. 8, Fact Sheet on Site 20 – Pyrotechnical Range and Site 24 Sanitary Landfill	CERCLA	Final	2001	Picatinny Arsenal
PP9.9.9:2/03	Fact Sheet No. 9 on Institutional Control Proposed Plan for 13 Sites	CERCLA	Final	2001	Picatinny Arsenal
Category = Eliminated Areas (E)					
No documents to date.					
Category = Legal (L)					
No documents to date.					
Category = Confidential (C)					
No documents to date.					

PICA-01, Site 17/18
Inactive Tetryl Waste Pits

SITE DESCRIPTION

The Northern Tetryl Pits consists of four unlined, bermed pits, located at the intersection of 18th Avenue and 13th Street. Two pits, the upper northern tetryl pits, were located on the north side of 18th Avenue, and two pits, the lower northern tetryl pits, were located on the south side of 18th Avenue. Each pit is ~10 ft in diameter, with depths ranging from 1 to 5 ft. The pits are believed to have been used from at least 1932 (when the pits were first indicated on engineering drawings) until 1945, for disposal of waste resulting from the processing of tetryl in the nearby 1000 buildings. The Southern Tetryl Pit received waste from Building 1052, a nitrating building, and may have operated from 1938 to 1945. The northern and southern tetryl pits are currently inactive. Materials that may have been associated with the tetryl pits included: tetryl, acid (possibly nitric acid) and water. Lead may also have been associated with the manufacturing of tetryl, although it is not a constituent of the final product.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS OF CONCERN:
Metals, VOCs, Explosives, PAHs
MEDIA OF CONCERN:
Soil, Sediment, Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
RD, RA, LTM

Surface soil samples were collected as part of a PA/SI conducted in 1996, and soil, sediment, and groundwater samples were collected during RI activities conducted from 1998 to 2000. Soil analysis indicates the presence of explosives (tetryl), metals (lead), and PAHs in excess of levels of concern. Sediment in the on-site ditch, at the northern tetryl pit, contains PAHs above levels of concern. An EECA was drafted and accepted in 2001 for the removal of soil co-contaminated with explosives and lead. Soil contaminated with explosives (~300cy) was treated in a bio-reactor to address explosives. Groundwater contains VOCs (TCE) above levels of concern at both the northern and southern tetryl pits, as well as metals (lead) and explosives (RDX) at the northern tetryl pits.

A RI was submitted in 2003. HHRA results indicate the non-cancer hazard index is less than 1 for target populations and estimated total cancer risks are 1E-4 for industrial research worker and within target risk range of 1E-4 to 1E-6 for the on-site youth visitor scenario.

PROPOSED PLAN

A decision document for the excavation of lead contaminated soils (160cy) will be developed.

An ecological risk assessment and FS will be completed.

After the soil removals, land use controls are the only action expected.

Groundwater contamination is being addressed on an area-wide basis as part of the Mid-Valley groundwater investigation currently in the RI/FS stage. Funding for the Mid-Valley GW Investigation is under PICA-204.

PICA-002, Site 34, Area A Lower Burning Ground

SITE DESCRIPTION

The Burning Ground encompasses an area of approximately seven acres. Site 34 is broken into 4 areas: the Landfill Area, the Waste Pile Area, the Open Burning Area, and the Burn Pan Area. The Landfilled Area sustained landfill operations from 1960 to 1980 to fill in low-lying areas. Direct burning of explosives-contaminated wastes on the ground surface was conducted in the Open Burning Area until the practice was discontinued in 1985. From 1985 to present, explosives-contaminated wastes have been burned in nine burning pans located in the Burn Pan Area. An incinerator is being constructed at a different location at PTA to replace the burning ground. Curretly, the Army has obtained the appropiate state and federal permits to operate the incinerator. However, incinerator operation cannot begin until the trial burn results are accepted by the state.

In the 1980s, a geophysical survey was conducted and groundwater wells were installed. A SI was completed in 1989 that included collection of surface soil, groundwater, surface water/sediment samples and analysis for VOCs, BNAs, cyanide, and total phenols. Metals and PAHs were detected above LOCs in soil and sediment. In 1990, USAEHA soil sampling found dioxins. In a 1990 groundwater assessment, wells and minipiezometers were installed and sampled for VOCs, BNAs, pesticides dioxins/furans, and PCBs. VOCs and metals were detected above LOCs and the HHRA found risk was above $5x10^{-4}$. A contamination assessment (CA) in 1991 included surface soil sampling for VOCs, BNAs, TPHs, PCBs, and PP metals. The 1993 RI included sampling soil, surface water, sediment, and groundwater for VOCs, metals, BNAs, dioxins/furans, PCBs, and pesticides. In soil there were exceedances of BNAs, metals, PCBs, and detections of explosives and dioxins/furans. There were exceedances of metals and VOCs in surface water and metals, pesticides, and cyanide in sediment. Metals were detected in above LOC in groundwater. The 1993 HHRA indicated that risk was above $1x10^{-4}$ from metals, PAHs, PCBs, and dioxins. The ERA determined that there was elevated risk from metals, pesticides, PCBs, and dioxins. A limited groundwater sampling event in 1999 indicated that sampling via low-flow techniques returned exceedances of published standards for only two metals (arsenic and lead). UXO has been found in close proximity to the site.

A feasibility study was prepared which recommends capping the entire site. The FS evaluated capping, soil fixation, soil treatment, excavation, and disposal in a number of different combinations. The regulatory agencies have indicated that capping with an impermeable cap would be an acceptable alternative. This FS was approved in fall 2001. The final Proposed Plan was submitted in Sept 2003. Surface soil sampling, in order to complete the contamination delineation, was initiated in Aug 2002. These results will be used to finalize the design of the cap.

STATUS

RRSE RATING:
High Risk

CONTAMINANTS: Metals, Dioxins, SVOCs, PCBs, Pesticides

MEDIA OF CONCERN: Groundwater, Soil, Sediment, Surface Water

COMPLETED IRP PHASE:
PA/SI, RI/FS

CURRENT IRP PHASE:
RD (funded), RA

FUTURE IRP PHASE:
RA(O)

PROPOSED PLAN

The cap design is funded in FY04. A modified (impermiable) asphalt cap will be placed on the site (~7 acres), followed by cap maintenance and LTM.

PICA-06, Site 16
Guncotton Line

SITE DESCRIPTION

The Guncotton Line is located near the southern end of Picatinny Lake, and is believed to be either an abandoned sanitary sewer line or a storm drain, that inadvertently received nitrocellulose (NC), referred to as guncotton. The pipeline was formerly used to discharge liquid waste from a TNT facility, in Building 520, into Picatinny Lake, southwest of the PTA power plant, Building 506. The line includes a portion of open trench, which collects surface runoff and buried pipelines. Reportedly, the pipeline is about 2,500 ft long and runs from a pit near Building 554, past Building 506, under the location of a former coal pile, and ends in the vicinity of Building 424-E.

PTA personnel have been able to accurately delineate approximately 80% of the line by tracing manholes and catch basins in the area. During the Phase II RI, a geophysical survey was conducted to identify the underground portion of the line. A long linear anomaly was identified northwest of Building 514; however, it was unclear whether the anomalous area represents the Guncotton line or another utility line. In addition, soil samples were collected from the open trench portion of the line. Explosives and metals have been detected in the soil from the open trench at concentrations in excess of LOCs. Bioassays conducted on soil from the open trench did detect explosives, pesticides and metals in the test organisms but the levels of these chemicals did not result in increased toxicity to the earthworms. The undefined portion of the line, under the former coal pile, near Building 506, was identified in Spring 2000 through use of video cameras, smoke testing and test pitting. Approximately 270 linear feet of a 12-inch pipeline, and 200 linear feet of an 8-inch pipeline, were excavated and removed with nitrocellulose-contaminated soil, in order that a sanitary sewer line could safely be installed through the affected area.

Additional sampling performed in 2001 delineated the horizontal and vertical extent of contamination in the open trench. Metals and explosives contamination are present along the entire length of the open trench (~1,125 feet). A HHRA and FS will be prepared.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
Metals, Explosives
MEDIA OF CONCERN:
Soil, Sediment
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
RI/FS, LTM

PROPOSED PLAN

A FS to include a PP and ROD will be completed. Institutional controls will be recommended as a remedy for this site.

PICA-008, Site 2
Inactive Rocket Fuel Test Areas

SITE DESCRIPTION

This 31-acre site includes Rocket Test Areas A, B, and C, that were leased to the NARTS division of the Navy. The Navy entered into a sublease agreement with the Reaction Motors Division (RMD) of Thiokol Chemical Co. in 1947. The sublease with RMD expired in 1968. RMD tested and evaluated rocket engines and their related components at the site. Other operations known to have occurred in these test areas include new and alternative rocket fuel development and engine redesign. The majority of the buildings have been decontaminated and demolished, and Test Areas B and C remain inactive and unimproved.

As part of the Phase II RI conducted in 1996, the following activities were performed: a geophysical survey, a soil-gas survey, installation of monitoring wells, excavation and sampling of test pits, and collection of soil, groundwater, surface water and sediment samples. VOC groundwater contamination has been identified in the two aquifers beneath the site. The shallow groundwater also contains levels of SVOCs in excess of LOCs. The extent of the groundwater contamination in the shallow aquifer was defined during the Group 3 RI completed in 1998. A small area of metals contamination has been delineated in the soil in the northwest portion of the site. The HHRA indicates that the risk and hazard to impacted site media are below the target risk level of $1x10^{-4}$, but above the target hazard level of 1. The shallow groundwater discharges to several ecologically-sensitive ponds, brooks and associated wetlands at the site. Surface water and sediment results have indicated levels of VOCs, ammonia and metals above LOCs in these surface water bodies. Additional groundwater investigation and MNA evaluation was completed in 2002, to fill specific data gaps to effectively evaluate remedial alternatives for the surface and groundwater contamination.

The FS addresses all media at RI Sites 1, 2 and 4. At RI Site 2, ammonia, carbon tetrachloride and corresponding breakdown products were AOCs in groundwater. In surface water and sediment annonia and metals were identified as AOCs. In surface soil, copper (2,030 mg/kg) was identified as an AOC.

In 2003, PICA-007 and 157 were listed as response complete in AEDB-R and will be addressed as part of PICA-008.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
VOCs, SVOCs, Metals
MEDIA OF CONCERN: Groundwater, Surface Water, Sediment, Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS (funded), RD
FUTURE IRP PHASE:
RA, RA(O), LTM

PROPOSED PLAN

The FS is funded in FY04.

At PICA-008- excavate ~20cy of metal and PCB-contaminated soil, groundwater treatment (carbon tetrachloride plume) with an iron PRB and monitored natural attenuation is expected.

At PICA-157- groundwater treatment (ammonia plume) with enhanced bioremediation and monitored natural attenuation is expected.

PICA-007 will be considered response complete after the FS.

Part of PICA-008 = PICA-007, Site 1
Inactive Rocket Fuel Test G-2 Area

SITE DESCRIPTION

This site, located at the eastern boundary of Picatinny Arsenal (PTA), was operated by the Naval Air Rocket Test Station (NARTS) under a lease agreement with the Army from the early 1950s until the late 1960s. The site was used for flare tests in the early 1980s and, more recently, as a training area for anti-mech/defensive combat and offensive combat/helicopter operations. The majority of the structures, at this site, were decontaminated and demolished prior to 1986. The site is currently inactive and is characterized as containing rubble and debris from past demolition activities. Much of the 17-acre site is forested woodlands.

Ames Brook is located ~1,300 ft south of the site and receives surface water runoff from several sites in the area. Ames Brook flows south off of PTA. Numerous surface water, sediment and soil samples have been collected from Ames Brook since 1975. Analytical results have not indicated any parameters in excess of Levels Of Concern (LOCs).

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS:
Metals
MEDIA OF CONCERN:
Soil, Sediment
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

As part of the Phase II RI conducted in 1996, the following activities were performed: a geophysical survey, a soil-gas survey, installation of monitoring wells, excavation and sampling of test pits, and collection of soil, groundwater and sump samples. Concentrations of lead were detected in soil above LOCs and SVOCs, and metals were reported at concentrations in excess of LOCs in a sediment sample collected from a sump. Areas of Concern (AOCs) identified at the site as a result of the RI include a sump at former Building 3555, and lead-contaminated soil associated with buried fill materials. Additional sampling at these AOCs, as part of the Group 3 RI, has indicated that the extent of contamination is minimal. Results of the HHRA for soil exposure indicate that the risks and hazard indices are below the target levels of $1x\ 10^{-4}$ and 1, respectively. Likewise, the cancer risk and non-cancer hazard from exposure to sediment in the sump are below these target levels.

This site is included in the Group 3 FS along with PICA-008 & 157 (RI Sites 2 & 4). Lead and zinc (4,410 mg/kg and 1,550 mg/kg respectivly) in the subsurface have been identified as an AOC in this FS. As part of the sump investigation, the sump at former Building 3555 was removed in 2003.

In 2003, PICA-007 and 157 were listed as response complete in AEDB-R and will be addressed as part of PICA-008.

Part of PICA-008 = PICA-157, Site 4
Former Motors/Rocket Fuel Test Area 3600

SITE DESCRIPTION

This 23-acre site is divided into Test Areas D and E, both of which were operated by the NARTS division of the Navy. Operations performed in these test areas were new and alternative rocket fuel development and engine redesign. The test stands were used to test liquid and solid fuel rocket engines, turbine pumps, and other rocket motor components. After rocket testing ended in 1968, testing of small mines was conducted for an unknown period of time somewhere in Test Area D.

In 1975, a Ballistic Rail Gun (BRG) was constructed in Test Area D. The BRG consists of a trough filled with water or anti-freeze, which allows the soft recovery of conventional shells fired from a 115-mm Howitzer cannon. Presently, Test Area D is active. At least four buildings are devoted to operations, storage, and support for the Hawk Radar system. Three buildings are devoted to ordnance disassembly. Specifically, Building 3611 is a photography lab where pictures of disassembled ordnance are developed.

STATUS

RRSE RATING:
High Risk

CONTAMINANTS: Metals, SVOCs, VOCs, Ammonia, PCBs

MEDIA OF CONCERN: Soil, Sediment, Groundwater, Surface Water

COMPLETED IRP PHASE:
PA/SI, RI

CURRENT IRP PHASE:
RC - 2003

NARTS used Test Area E to test and develop highly volatile rocket fuels and rocket propulsion systems. Rocket engine testing occurred over a rectangular pit located behind Building 3618. Before the exhaust pit was lined with gunnite in 1965 or 1966, materials in the exhaust pit most likely leached into the ground. Besides army training activities, Test Area E has remained inactive since 1968.

Results of the Phase II RI, and additional sampling during the Group 3 investigation, have identified the following AOCs at the site: surface water and sediment contamination in two sumps; PCB-contaminated surface soil around the transformer pads; inorganic contaminated surface water and sediment; and VOC contaminated groundwater. Results of a HHRA indicate that the risk and hazard from exposure to impacted site media are below the target levels. Bioassays conducted on surface water from the rocket exhaust pond showed significantly decreased survival of test organisms, suggesting some minor potential for aquatic toxicity at the site. However, results of a macroinvertebrate survey suggest that the sediment does not appear to be highly toxic. The two sumps (one at Bldg 3617 and one at Bldg 3610) were removed as part of a sumps investigation in 2003. The FS identified surface water contaminated with metals and ammonia as well as ammonia contaminated groundwater as AOC.

In 2003, PICA-007 and 157 were listed as response complete in AEDB-R and will be addressed as part of PICA-008.

PICA-011, Site 122, Area D
Bldg 60 Satelite Waste Accom Area

SITE DESCRIPTION

Building 60 was constructed adjacent to BSB in 1942 as an environmental testing laboratory. Various types of testing conducted in the building include: ballistic air gun launch testing, drop testing, solar radiation testing, mechanical stress, shock, vibration, and jolt testing, and static load testing. The various testing equipment and machines at Building 60 utilize lubricating, hydraulic, and heating oils. Heating oils were formerly stored in Building 60-A which was located on the west side of Building 60. The recirculation water/steam is discharged into Bear Swamp Brook via various pipes projecting out of the eastern wall of the building. These discharges were permitted through a NJPDES permit.

A remedial investigation was performed in 1994 that included a radiological survey, surface soil, subsurface soil, surface water and sediment sampling as well as human health and ecological risk assessments. The radiological survey did not identify any areas of concern. The HHRA determined that carcinogenic risk was between or above 1x10-4 to 1x10-6. The ERA determined that contaminants were detected but the communities were not affected and the habitat was highly altered by human activity. The remedial investigation recommended that additional sampling be completed to delineate areas of metals, PCB and SVOC contamination above LOCs. Based on these recommendations and regulatory comment, a follow-on investigation was completed in 1997. This RI identified soil contaminated with SVOCs, PCBs, and metals and sediments contaminated with PCBs. In 1999, an EE/CA was written and in 2000 an interim removal action was performed for PCBs. A total of 387 cys of soil and sediment was removed from the site. Other areas of the site still contain soils contaminated with SVOCs and metals at moderate levels and PCBs above the residential standard. Groundwater at the site is addressed in the Area D areawide groundwater FS.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
Metals, PCBs, SVOCs, Pesticides
MEDIA OF CONCERN:
Soil, Sediment, Surface Water
COMPLETED IRP PHASE:
PA/SI, IRA
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
RI/FS, LTM

PROPOSED PLAN

A FS to include a PP and ROD will be completed. Land use controls are expected.

PICA-013, Site 78
Optics Proto Proc Facility Site Bldg 91

SITE DESCRIPTION

Building 91 is located at the intersection of Fourth Avenue and South Sixth Street, in the southern portion of PTA. The building was built in 1942 as a storehouse and supply building. An optics laboratory was constructed in the north end of Bldg 91 in 1980, and since then has lost its mission. Operations carried out in the optics laboratory included a glass machine shop. A hazardous waste inventory lists Bldg 91 as containing a hazardous waste satellite area, where cleaning material, and oily rags were stored in 1993 in a 55-gallon drum. Currently, the central portion of Bldg 91 is used as office space. The southern end is used for receiving and storage of many materials received at the Arsenal.

Soil samples were taken in 1996. Based upon results, RI activities were initiated in 1998 for VOCs, SVOCs, and metals in soil, surface water, and sediment. Three groundwater monitoring wells were installed as part of a closure report in 1999 upon removal of two heating oil USTs (3,000 and 7,500 gallons each) on the eastern side of the building. Soil analysis indicates the presence of PAHs in exceedance of the levels of concern (LOC). Surface water metals concentrations are in excess of the LOCs and sediment contains metals and PAHs at concentrations greater than LOC. Groundwater contamination includes VOC concentrations (2 plumes) in excess of levels of concern detected during RCRA activities. Delineation of the groundwater VOC contamination was completed in the RI stage. A RI was submitted in 2003 in which HHRA results worker scenario is 1E-4 and within the 1E-4 to 1E-6 range for on-site youth visitor scenario. A pilot study (sodium lactate injection) was funded in FY03 to address VOCs in groundwater.

The principle cause for concern at this site is the discharge of VOCs to Green Pond Brook.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS OF CONCERN:
VOCs, PAHs, Metals
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
RI/FS, RD, RA, LTM

PROPOSED PLAN

A pilot study was funded in FY03 and is expected to be completed in summer 2004. FS activities with a proposed plan (PP) and ROD are scheduled. In situ treatment of the groundwater (sodium lactate injection) is planned. MNA will likely follow.

Existing ingeneering controlas are expected to be the remedy for the PAH-contaminated soil.

PICA-015, Site 54
Lake Denmark

SITE DESCRIPTION

Lake Denmark is a man made lake, located in the northeastern portion of PTA, with a surface area of approximately 174 acres. Lake Denmark has an average depth of 6-7 feet, and is part of PTA's service water source with the outfall from the lake flowing into Picatinny Lake. Surface water at Picatinny is not used as raw water for the potable system. Storage magazines, in the 1200 Area, are the only development around Lake Denmark. ANL reported Lake Denmark has a long history as a repository of munitions and their associated wastes. After the 1926 Lake Denmark explosion, munitions were reportedly dumped into the lake. ANL also discussed the possibility of Radiation Technology dumping waste into Lake Denmark. Lake Denmark has been used as an impact area for experimental mortar rounds and other explosive or pyrotechnic munitions. This site is currently inactive. In 1976 and 1981, chloroform was detected at a concentration above the surface water LOC in samples of the water from the outfall of Lake Denmark. In 1985, one water sample was collected from the Lake Denmark outfall and analyzed for pesticides/PCBs. No analytes of concern were detected in the sample.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS OF CONCERN:
Metals, UXO
MEDIA OF CONCERN:
Surface Water, Sediment
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
RI/FS, LTM

Explosives, VOCs, SVOCs, pesticides/PCBs, anions, and metals analysis of soil was conducted as part of the 1996 PA/SI. Based upon results of the PA/SI, RI activities were conducted from 1998 to 1999 including VOCs, SVOCs, explosives, and metals analysis of surface water and sediment; targeted metals analysis of soils; and geophysical surveys.

Surface water and sediment analysis indicate the presence of metals in exceedance of LOC. A geophysical survey conducted as part of RI activities indicates three areas may contain metal deposits. HHRA results indicate risks and hazard are within the target levels. Based upon results of the RI, a screening level Ecological Risk Assessment was conducted in 2000. Results of the screening level Ecological Risk Assessment indicate the level of ecological risk present at Lake Denmark does not warrant a full Ecological Risk Assessment.

PROPOSED PLAN

A FS to include a PP and ROD will be completed. Institutional controls will be recommended for this site.

PICA-022, Site 50
Power Plant/Haz Waste Tanks/Propellant Prd

SITE DESCRIPTION

The site consists of Building 519, a former still house for storage of ether and alcohol, and Building 519-A, which formerly housed an inactive 3800 gallon AST, that was used to store spent alcohol. Bldg 519 and associated buildings were a single-base propellant manufacturing area. Operations at Bldg 519 also included the manufacture of ether. Bldg 519-A, constructed in 1941, was an open shed-type structure with no walls. Three ASTs, with an approximate capacity of 3,800 gallons each, were used to store virgin ethyl alcohol, process wastes from explosives manufacturing, ether, and spent alcohol. Bldg 519 was deactivated in 1975; the ASTs and all associated piping were removed from Bldg 519-A at approximately the same time. Both buildings were subsequently demolished in 1995 as part of the TECUP program.

Analytical results of soil samples collected during the RCRA closure of Bldg 519-A detected levels of lead above its comparison criterion. Phase II RI activities were conducted at this site in 1996. Analytical results from the RI identified explosives and metals in the soil at concentrations above LOCs. Elevated concentrations of SVOCs and metals were also detected in sediment collected from a sump at Bldg 519. In addition, TCE was reported in one monitoring well in excess of its LOC.

Additional samples collected in 2001 have delineated the extent of the lead contamination in soil, and TCE contamination in groundwater. A human health risk assessment will be prepared for the site.

In 2003, PICA 047 and 145 were listed as response completed in AEDB-R and will be addressed under PICA-022.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS: VOCs, SVOCs, Metals, Explosives, TPH
MEDIA OF CONCERN:
Soil, Sediment, Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
RI/FS, RD, RA, LTM

PROPOSED PLAN

Additional soil samples will be taken. A FS to include a PP and ROD (funded in FY04) will be completed.

At PICA-022- excavation of ~200cy of metals-contaminatyed soil will be removed.

At PICA-047- excavation of ~150cy of metals-contaminatyed soil will be removed.

At PICA-145- excavation of ~900cy of metals-contaminatyed soil will be removed.

Groundwater monitoring is expected to follow.

Part of PICA-022 = PICA-047, Site 63/65 Steam Power Plant Bldg 506

SITE DESCRIPTION

Building 506 serves as PTA's main power plant and houses three seven-story boilers, which provide PTA with electricity and steam heating. Coal and oil have been used to generate the arsenal's power. Currently, only oil is used to generate power. The oil is stored in two 420,000-gallon ASTs and one 850,000 gallon AST. Two large coal piles, which were used to stockpile coal for the plant, have caused elevated sulfur levels and a low pH in the underlying soil. Both coal piles have been removed from the base. Two large oil spills have been reported at the building. In 1981, 20,000 gallons of #6 fuel oil spilled and migrated into Picatinny Lake and nearby sewage drains. In addition, 3,000 gallons of oil were spilled in 1987. In 1990, during the removal of two USTs, petroleum-contaminated soil and free product, floating on the water table, were observed and removed.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
SVOCs, Nitroglycerin, Petroleum Hydrocarbons, Arsenic
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Building 506 has a NJDEP permit for several discharges into Picatinny Lake. Since 1989, only non-contact cooling water has been discharged into the lake. Analyses of soil samples, collected around the building in 1989, indicated the presence of elevated levels of metals and TPHs. As part of a RCRA closure conducted in 1991, elevated levels of PCBs and lead were detected in chip samples collected from the building; however, NJDEP approved the closure. Phase II RI activities included a geophysical survey, a soil-gas survey, installation of five monitoring wells, and collection of soil, groundwater, surface water and sediment samples. The RI identified elevated levels of TPHs and diesel fuel in the groundwater, probably related to the past oil spills, as well as nitroglycerin. In addition, SVOCs and arsenic were reported in excess of their LOCs in the soil. A sediment bioassay indicated total toxicity, suggesting that benthic receptors are potentially at risk from exposure to sediments in Picatinny Lake adjacent to the site.

In order to delineate the existing soil and groundwater contamination, additional soil sampling and a soil-gas survey were conducted. Based on the soil-gas results, a downgradient monitoring well was installed and found to contain light non-aqueous phase liquid (LNAPL). In order to monitor the LNAPL, three shallow monitoring wells were installed. Subsurface soil samples collected from the well borings and groundwater samples collected from the wells did not contain any chemical concentrations above LOCs. Passive oil skimmers have been installed in the three shallow wells to remove floating LNAPL from the groundwater.

In 2003, PICA 047 and 145 were listed as response completed in AEDB-R and will be addressed under PICA-022.

Part of PICA-022 = PICA-145, Site 110 500 Area Buildings

SITE DESCRIPTION

The site consists of the 500 Area buildings located southeast of Picatinny Lake. The 500 Area buildings were used for the production of propellants. Many of the buildings in the 500 Area were characterized, individually, as part of the Phase II RI conducted at other sites. Most of the 500 Area buildings have been demolished under TECUP, during the past 15 years. Potential sources of contamination include reported dumping into Picatinny Lake, and propellants, which reportedly fell off trains that ran through the area.

In order to complete the characterization of the remaining buildings in the area, additional RI activities were conducted in association with the individual sites during 2001. Results of the sampling were used to close data gaps, and determine the area of soil contamination, which will be addressed in a feasibility study.

In 2003, PICA 047 and 145 were listed as response completed in AEDB-R and will be addressed under PICA-022.

STATUS

RRSE RATING:
Medium Risk

CONTAMINANTS:
Explosives, Metals

MEDIA OF CONCERN:
Soil

COMPLETED IRP PHASE:
PA/SI, RI

CURRENT IRP PHASE:
RC - 2003

PICA-029, Site 96
Buildings in 300 Area

SITE DESCRIPTION

This site encompasses Buildings 301, a paint shop and 301-A, an oil house. Building 301 was built in 1943 as a post-engineering store-house. Although the type of material stored in the past is unknown, it is highly likely that hydraulic oils, solvents, paints, and paint thinners were stored at Building 301. Currently, Building 301 is being used as a sign shop and houses a paint booth area.

The building was constructed in 1943 as an oil house and is presently used for the same purpose. Building 301-A was originally constructed to store drums of used and unused oils. In the past, drums of waste oil and solvents have been stored north of Building 301-A. According to PTA personnel, this storage pad area was also used by the laundry facility (Building 336) for temporary storage of explosive-contaminated clothing. PTA personnel also indicated that drums of hydraulic oil located at the storage pad area have leaked in the past, and may have impacted soil at Site 96. Currently, no drums are being stored on the asphalt pad area.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS:
PAHs, Metals
MEDIA OF CONCERN:
Soil, Sediment
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
RI/FS, LTM

During the Phase I RI, thallium was detected above its LOC in a surface soil sample. No exceedances were reported in the surface water samples, but PAHs, metals, pesticides and PCBs were detected in the sediment samples at concentrations in excess of LOCs. Human health risk falls within the target range (1×10^{-4} to 1×10^{-6}). The hazard index is below the target level of 1. Since this site is situated in a high human use, industrialized portion of PTA, the site offers little risk to wild species. In response to regulatory comments on the RI, additional soil sampling was performed at this site in 2000. No sample concentrations were detected above LOCs, and no further sampling is proposed for this site.

In 2003, PICA-029, 089, 117, 119, 121, 188 were closed and will be addressed under this site.

PROPOSED PLAN

A FS to include a PP and ROD will be completed.

At PICA-029- institutional controls are expected.

PICA-089, 117, 119, 121, 188 are considered response complete.

Part of PICA-029 = PICA-089, Site 52
Petroleum Leak Area, Bldg 305

SITE DESCRIPTION

This site encompasses Building 305 and a swampy area on the south side of the building. The northern section of the building is presently being used as a garage for conducting vehicle maintenance operations. The northern section may have also been used as an explosive manufacturing area during World Wars I and II, as an ice production facility, and as a storage area for drums containing waste oil and solvents. In 1986, all storage tanks were decommissioned when a petroleum release occurred from one of the tanks. The southern section has been used as a refrigeration unit, and for the storage of photographic films and paper. Drums, potentially containing oil/solvents, have been stored at the outdoor drum storage pad.

On February 20, 1986, a petroleum spill involving approximately 400 gallons of diesel fuel occurred at the site. Following the spill, oily materials were removed from the area including Green Pond Brook and the associated drainage ditch. Analytical results of samples collected from the spill area indicated high levels of explosives in soil. In response to the explosives contamination, a drainage collection system was installed to capture impacted sediments. The contaminated surface water/sediment was pumped into tank trucks for off-site disposal. The cleanup action was completed in June 1986. Confirmatory soil samples indicated total petroleum hydrocarbon (TPH) concentrations below the LOC.

During the Phase I RI, elevated levels of metals and DDT were reported in the surface soil samples collected at the site. In surface water, metals, pesticides and PCBs were detected at concentrations above LOCs. In the associated sediment samples, PAHs, metals, pesticides and PCBs exceeded LOCs. Human health risk falls within the target range (1×10^{-4} to 1×10^{-6}). The hazard index does not exceed the target criterion of 1. Since this site is situated in a high human use, industrialized portion of PTA, the site offers little risk to wild species. In response to regulatory comments on the RI, additional soil sampling was performed at this site in 2000. No sample concentrations were detected above LOCs and no further sampling is proposed for this site.

In 2003, PICA-089, 117, 119, 121 and 188 were listed as response complete in AEDB-R and will be addressed under PICA-029.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
PAH, PCBs, Pesticides, Metals
MEDIA OF CONCERN:
Soil, Sediment
COMPLETED IRP PHASE:
PA/SI, RI, IRA
CURRENT IRP PHASE:
RC - 2003

Part of PICA-029 = PICA-117, Site 134
Bldg 302, Service Shops

SITE DESCRIPTION

Bldg 302 was constructed in 1905 as a maintenance and service shop. Bldg 302 has housed two different divisions of ARDEC - the DEH and the Logistic Management Division (LMD). These divisions operated and maintained various shops including a tin shop, paint shop, machine shop, and millwright shop. Vehicle maintenance operations have been conducted in the northern corner of Bldg 302. Historically, Bldg 302 has been primarily used as a storage and machine shop bldg. Available documents also indicate that portions of this bldg may have been used as a laundry facility to wash explosive contaminated clothing.

In the past, a disposal pit, adjacent to Bldg 303, was used to bury waste oil and metal parts. This disposal pit area was reportedly covered with asphalt. In addition, washwater, generated at Bldg 302, was collected in two large above ground holding tanks. The washwater was regularly emptied from the tanks into a wetland area located southeast of the building. This wetland area empties into a drainage ditch, which discharges into Green Pond Brook.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS:
Metals, VOCs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Environmental samples, collected during the Phase I RI, indicated that beryllium was detected above its LOC in the surface soil samples. VOCs and metals were detected at concentrations exceeding their LOCs, in a groundwater sample, collected downgradient of the site. A soil gas survey was also conducted at the site, and two samples had high levels of PCE. Human health risk falls within the target range (1×10^{-4} to 1×10^{-6}). The hazard index does not exceed the target level of 1. In order to investigate the high soil gas levels, soil borings were drilled and subsurface soil samples collected in 2000. Soil samples were also collected from three small intermittent drainage ditches at the site. Lead and PCE were detected at concentrations above LOCs in the subsurface soil samples. Several metals exceedances were identified in the soil samples collected from the drainage ditches. Additional sampling performed in 2000 completed the delineation of soil contamination at the site and no further sampling is proposed.

In 2003, PICA-089, 117, 119, 121 and 188 were listed as RC in AEDB-R and will be addressed under PICA-029.

Part of PICA-029 = PICA-119, Site 136
Bldg 355, Metallurgy Lab

SITE DESCRIPTION

Bldg 355 was constructed in 1940 as a storehouse, although the types of materials stored are unknown. Since the late 1960s, Bldg 355 has primarily housed the Engineering Division, the Research and Development Division, Physical Sciences Laboratories, and Metallurgical Laboratories. Tests performed in the metallurgical laboratory include salt spray exposure tests, fracture tests, and mechanical tests. Additionally, Bldg 355 houses a photography and an x-ray laboratory for the analysis of fractured materials. Mechanical testing conducted at Bldg 355 included testing of DU. Although Bldg 355 is still currently active as a metallurgy laboratory, no DU testing is being conducted. Most of the wastewater generated at Bldg 355 was reportedly discharged into sanitary sewers. However, drain pipes from several rooms discharge onto the ground surface outside the building.

Environmental samples collected during the Phase I RI contained LOC exceedances in the surface soil and groundwater samples. Mercury concentrations, detected in the soil samples, exceeded the LOC. Several LOC exceedances were reported for VOCs and metals in the groundwater samples collected upgradient and downgradient of the site. The non-carcinogenic human health hazard equals and exceeds the HI criterion of 1 for future industry/research workers and future construction/excavation workers, respectively. Carcinogenic risk does not exceed 1×10^{-6}. In order to delineate the extent of the mercury contamination in the soil, additional soil samples were collected at the site in 2000. Results of this sampling have successfully delineated the extent of contamination, and no additional sampling is proposed for this site.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS:
Metals, VOCs
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

In 2003, PICA-089, 117, 119, 121 and 188 were listed as RC in AEDB-R and will be addressed under PICA-029.

Part of PICA-029 = PICA-121, Site 95
Bldg 336, Explosive Laundry

SITE DESCRIPTION

Former Bldg 336 was constructed in June 1956 to serve as a laundry facility for explosive- contaminated clothing. Laundry operations, at Bldg 336, were terminated in 1979 and the bldg was demolished in October 1982. During its operational period, the washwater generated, at Bldg 336, was discharged into a holding tank to settle the explosive residues. The clarified washwater, from the holding tanks, was then emptied onto the ground, and flowed along a drainage ditch that discharged into the swampy discharge pond located at RI Site 52. The exact nature and quantity of washwater generated at the laundry facility is unknown. Based on the sampling data, collected along the drainage ditch, it is highly probable that the washwater contained explosives.

Environmental samples collected during the Phase I RI contained elevated levels of benzo(b)fluoranthene and metals in the surface soil. In sediments, PAHs, pesticides, PCBs and metals exceeded their respective LOCs. Human health risk falls within the target of 1×10^{-4} to 1×10^{-6} for future research workers. Noncarcinogen hazard equals the harzard criterion of 1. The main risk and hazard drivers are arsenic, beryllium and PCBs. Since this site is situated in a high human use, industrialized portion of PTA, the site was not evaluated in the Phase I ERA. In response to regulatory comments on the RI, additional soil sampling was performed at this site in 2000. No sample concentrations were detected above LOCs and no further sampling is proposed for this site.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS:
PAHs, Metals, Pesticides, PCBs
MEDIA OF CONCERN:
Soil, Sediment
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

In 2003, PICA-089, 117, 119, 121 and 188 were listed as RC in AEDB-R and will be addressed under PICA-029.

Part of PICA-029 = PICA-188, Site 185
Former Laboratory in Bldg 350

SITE DESCRIPTION

Building 350 was constructed between 1938 and 1940 for use as a concepts and applications laboratory. Laboratory operations included photography, electronics, dynamics, solid state, ceramics, and optical laboratories. An acid drain filter, located in the western portion of the building, discharged wastewater from the sinks, fume hoods, and floor drains into a storm sewer north of the building. The building was converted to office space, its current use, prior to 1971.

According to the Foster Wheeler Discharge Report, the potential for contaminated discharge from the building is low. As part of a RRSE performed by USACHPPM, two wells were installed and sampled for VOCs, SVOCs, metals, explosives, and pesticides. Lead was detected in both wells in exceedance of the LOC. However, it was determined that the well screen for one well was cracked and leaking filter pack sand into the well. In 2000, an additional groundwater sample was collected from the undamaged well and analyzed for lead.

Lead was not detected. The damaged well was abandoned in accordance with NJDEP protocol. Since no chemical concentrations were detected above screening criteria in the one groundwater sample collected during the Phase I 2A/3A RI, risk and hazards were not quantified for the site.

In 2003, PICA-089, 117, 119, 121 and 188 were listed as response complete in AEDB-R and will be addressed under PICA-029.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS:
Metals
MEDIA OF CONCERN:
Groundwater
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

PICA-050, Site 3
Former React MTRS/RCKT Fuel Test Area 1500

SITE DESCRIPTION

This 20-acre site consists of the 1500 Series Buildings and is divided into the Western Explosives Area and the Eastern Pyrotechnics Area. From the early 1950s up until 1958, liquid fuel missiles were tested in the Eastern Pyrotechnics Area. After 1958, additional buildings were constructed for mixing, pressing, and filling of various pyrotechnic compounds into flares, fuzes, and primers. The Western Explosives Area was constructed in the late 1940s and was used for the large-scale storage, production, conditioning, loading and testing of pyrotechnics, explosives and solid rocket propellants from 1947 through the early 1960s. The Eastern and Western Explosives Areas are currently used for storage, assembly, research, development and testing of high explosives, propellants and projectiles.

The 1996 Phase II RI involved the performance of a radiological survey, installation of monitoring wells, and collection of soil, groundwater, surface water and sediment samples at the site. The RI identified explosives in groundwater downgradient of the Building 1505 Test Range, including RDX in excess of its LOC. Lead was detected above its LOC in a sediment sample associated with a dry well. SVOCs and metals have been detected at elevated levels in surface water and sediment samples collected from the swamp behind Building 1515 resulting in ecological concerns for the area. Additional RI activities performed in 2000 included the installation of an additional well and collection of additional soil, groundwater and sediment samples. Results of this investigation successfully delineated the extent of RDX in the groundwater and characterized the lead contamination. Additionally during the 2000 investigation, an UST was identified near Building 1504. The UST was removed in FY01. Estimated cancer risks are below or within USEPA's target range of 1E-4 to 1 E-6 for all exposures scenarios. The estimated non-cancer hazards are all below USEPA's target threshold of 1. In addition, risk from radiological exposures were below or within USEPA's target range. In response to NJDEP comments, an upgradient monitoring well was installed in 2001. The well was sampled in early 2002; explosives were not detected. The suspected dry well and associacted lead-contaminated soil was removed in 2003.

STATUS

RRSE RATING:
High Risk

CONTAMINANTS:
RDX, Metals, SVOCs

MEDIA OF CONCERN: Groundwater, Surface Water, Soil, Sediment

COMPLETED IRP PHASE:
PA/SI, IRA

CURRENT IRP PHASE:
None

FUTURE IRP PHASE:
RI/FS, LTM

PROPOSED PLAN

Additional lead-contaminated soil will be removed (funded in FY03, expected to be completed in FY04).

A FS will be performed to evaluate remedial alternatives for the site. LTM is proposed to monitor the groundwater quality at the site.

PICA-053, Site 7
Munitions & Propllts Test Area/Chem Burial

SITE DESCRIPTION

The former range area, referred to as Building 1242, is located west of Lake Denmark on Green Pond and Copperas Mountains. Building 1242 is located near the end of Gorge Road in an unused former testing area of the arsenal. The site covers approximately 37 acres, was constructed in 1964, and consists of two firing lines for the testing of recoilless rifles. The two lines share a single firing point, but have two impact areas. The firing point has a berm for the safety of the operators and a gun turret, which functioned as a safe house. Presently, the firing point of the former range area is located in a clearing that contains a large berm, a battleship gun turret, some water-tank cradles, and the remnants of the electrical system, which at one time was run by a generator powered by gasoline or diesel fuel brought in by small containers. The gun turret was placed behind the berm from the firing point, and was used as a safe house for the operators in the area. The impact area of the 900-yd range was a slug-butt constructed of I-beams, a large corrugated pipe, and sand. Materials used at Building 1242 include fuel for the generator and ammunition.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
RI/FS, LTM

A PA/SI was conducted at this site in 1996. Explosives, VOCs, SVOCs, pesticides/PCBs, anions, and metals analysis of soil were conducted as part of this 1996 PA/SI. Cadmium was detected at concentrations slightly above LOC in soil. No other contaminants were found at elevated levels.

In 2003, PICA-056 was listed as response complete in AEDB-R and will be addressed under PICE-053.

PROPOSED PLAN

A FS to include a PP and ROD will be completed. Institutional controls will be recommended as the remedy for this site.

Part of PICA-053 = PICA-056, Site 10
Former Chemical Burial Area

SITE DESCRIPTION

The Chemical Burial Pit, Site 10, is located along Berkshire Trail in the northwestern portion of the Arsenal. Containers of unknown chemicals were reportedly placed in the 25 x 25 x 5 ft pit, then covered with fill material and a concrete slab and/or rocks. Exact dates of use of the Chemical Burial Pit are not known; however, PTA personnel indicated that no material had been buried at the site for the last 30 years. A water line is present at the site, coming from the southeast. The aboveground line was installed for fire safety and is empty until needed. Documentation regarding the chemical burial pit is limited. However, both cyanide and fluoroacetates were reportedly buried in the pit. During a 1996 site inspection, a dry water line was noted as terminated in the area of the Chemical Burial Pit. The presence of the line in this area is unusual, given the lack of any other site, such as a test area, along this section of Berkshire Trail.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS OF CONCERN:
Metals
MEDIA OF CONCERN:
Groundwater
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

A groundwater Site Investigation was conducted at this site from 1987 to 1989. Groundwater was collected for analysis of VOCs, BNAs, cyanide, and metals. No constituents of concern were detected above levels of concern. Remedial Investigation activities were conducted from 1998 to 1999. A geophysical survey, soil gas survey, and excavation of test pits were conducted as part of the RI, in order to determine the location of the chemical burial pit and its environmental impact. The location of the burial pit could not be ascertained through geophysical methods, and analysis of soil samples collected during test pit operations indicates no contaminants are present at concentrations greater than levels of concern for soil. Groundwater analysis was conducted, which indicated the presence of a very limited number of metals exceedences. HHRA results indicate risks and hazard are within the target levels. Ecological risk will be addressed as part of the Phase III Ecological Risk Assessment.

In 2003, PICA-056 was listed as response complete in AEDB-R and will be addressed under PICE-053.

PICA-057, Site 54
Picatinny Lake

SITE DESCRIPTION

Picatinny Lake, located at the geographic center of PTA, was formed in the 1880s by damming Green Pond Brook. Picatinny Lake is approximately 118 acres in area, and approximately 5,200 ft long by 1,000 ft wide. The lake has a maximum depth of 20 ft and contains approximately 165 million gallons of water. Picatinny Lake is a source of non-potable water used for production-related purposes and fire fighting.

From 1985 until 1988, PTA discharged treated process wastewater and cooling water to Picatinny Lake under a NJPDES permit. Since 1989, only non-contact cooling water has been discharged to the lake. Many active, inactive, and demolished buildings surround the lake. Surrounding land use includes propellant and munitions research and development, production, and storage; steam and electric power generation; chemical laboratories, and a betatron and x-ray laboratory. Previous land use includes smokeless powder production and testing.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
VOCs, SVOCs, Explosives, Metals
MEDIA OF CONCERN:
Sediment, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
LTM

Numerous potential sources of contamination have been documented around the lake, including use as an impact area for experimental mortar rounds; storage of smokeless powder and explosives underwater; discharge or disposal of explosives and debris into the lake; pyrotechnic testing on Flare Island; explosive-related accidents at the surrounding buildings; oil spills, wastewater discharges or sewage overflows.

Phase II RI and ERA activities included the performance of geophysical surveys, the collection of 23 surface water and sediment samples, the performance of surface water and sediment bioassays, the completion of benthic macroinvertebrate and fish surveys, and the chemical analysis of fish tissue samples. Surface water and sediment contamination was identified throughout the lake.

Results from a fish consumption, HHRA for PTA's fishable water bodies, indicated hazards above USEPA's target threshold of 1 for Picatinny Lake. Thus, PTA instituted fish consumption advisories, as recommended ny NJDEP, for anglers using Picatinny Lake and other water bodies at PTA.

PROPOSED PLAN

A FS to include a PP and ROD will be completed. Institutional controls will be recommended as a remedy for this site.

PICA-058, Site 12
Inactive Munitions Waste Pit (B-656)

SITE DESCRIPTION

The Munitions Waste Pit, Site 12, is located in the northwestern portion of PTA, at the intersection of Berkshire Trail and 20th Avenue near former Building 656. The site was operated from approximately 1955 until the mid-1980s for evaluating munitions. A layer of topsoil and sand was deposited on the waste pit after use of the site was discontinued in 1980.

Historical practices consisted of testing munitions, and then filling any resulting crater in the ground with fill material, typically gravel and sand. Many ammunition fragments were projected out from the site and were never recovered. According to PTA personnel, from 1965 to the present, no munitions were disposed of at the site. Since that time, all material associated with munitions testing was taken to the PTA Burning Ground.

Based on a document review, the site currently consists of a gun turret, formerly used for ammunition testing, an elevated stand from which munitions were hung and/or fired, a metal cage in which munitions were detonated and hazard classification tests were conducted, three concrete bases with a cut projectile casing set in each, several 8-inch gun barrels, one partial jet hull, two pieces of concrete storm sewer piping ~18-inches in length, and several mounds of building debris (including asphalt, concrete blocks, and bricks). Propellant grains were scattered on the ground in the area of the metal cage, and the three concrete bases. Historically, the site has also contained a control building (former Bldg 656), a guard shack, a second elevated stand, two additional jet hulls, a steel test unit, and steel observation towers in the western and central portions of the site. A steel box, wood box, wire mesh box, and a steel trough are located in the northern section of the site. The steel trough was used to fire munitions, not for waste discharge.

In the late 1990s, a large amount of rock and fill dirt was placed on the site. The rock and fill dirt was removed from a nearby construction site.

A well was installed (2001), that has low levels of TCE.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
UXO, Explosives, Metals, TCE
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
RA, LTM

PROPOSED PLAN

Groundwater wells will be installed down-gradient. The anticipated remedy for this site is long term groundwater monitoring (MNA) with land use and institutional controls.

PICA-065, Site 23
Post Farm Landfill

SITE DESCRIPTION

The Post Farm Landfill is 10.3 acres and located along the top of the unnamed hill that forms the southeastern boundary of PTA. It contains a borrow pit near the central portion of the site, and two landfilled areas where drums and other materials were buried. During the 1950s, the site was used mostly as a source of borrow materials. In the 1960s landfilling activities began in the southern and northern area of the site. These areas are referred to as the northern drum burial area (DBA) and southern DBA. The DBAs reportedly received fly ash from coal burning operations, paint stripping wastes, phenols, and spent explosive-laden hydraulic oils in containers or as free liquid.

A preliminary assessment was performed in 1991 that recommended a site investigation and non-time critical removal action. In 1992, a non-time critical removal action was performed to remove buried containers at the site. During the removal action, small containers, garbage cans, batteries, and drums were removed and disposed of off-site. Post excavation sampling and exploratory trench sampling were also completed as part of the action. The trench investigation determined that all buried containers had likely been removed from the site. The last phase of the action included placing at least 6-18 inches of native soil over the former burial areas.

A remedial investigation was completed in 1994 with additional sampling in 1996. The 1994 HHRA indicated that carcinogenic risk was in the range of $1x10^{-4}$ to $1x10^{-6}$ from PAHs, PCBs, and dioxins/furans. This HHRA was based on a limited number of samples. The RI included completing soil borings, installing monitoring wells, collecting surface soil, sediment, surface water, groundwater samples and completing a fracture trace analysis. Results indicate moderate criteria exceedances in surface soil for metals and SVOCs, in subsurface soil and sediment for metals, and in groundwater for VOCs, dioxins/furans, metals, and radionuclides. The detections of dioxins/furans were not reproduced in the later 1997 sampling event. A FS was completed in 2000, which evaluated excavation and disposal, onsite fixation, capping, and institutional controls. The FS recommendation was for institutional controls and long-term groundwater monitoring. The USEPA and NJDEP approved the FS. A proposed plan was submitted in October 2001. The Proposed Plan will go to public noticve in late 2003.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS: VOCs, SVOCs, Metals, Radionucluides
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, IRA
CURRENT IRP PHASE:
RI/FS (funded), LTM
FUTURE IRP PHASE:
LTM

PROPOSED PLAN

Groundwater will be monitored and land use and institutional controls will be maintained.

PICA-066, Site 24
Sanitary Landfill (Near Site 20)

SITE DESCRIPTION

Site 24 occupies approximately 28 acres adjacent to the southern boundary in the southwestern corner of the arsenal. Records indicate that sanitary waste, fly ash, ordnance, industrial wastes and wastewater treatment plant sludge were dumped on a portion of the site.

A 1994 remedial investigation included geophysical, radiological, and soil gas surveys in addition to surface soil, subsurface soil, surface water/sediment and groundwater samples analyzed for VOCs, BNAs, metals, cyanide, explosives, pesticides, PCBs, dioxins/furans, and radiologicals. Metals and pesticides were detected above surface soil LOCs. VOCs and metals were detected above surface water LOCs. Metals, cyanide, and pesticides were detected above sediment LOCs. The HHRA determined that carcinogenic risk fell between or exceeded the $1x10^{-4}$ to $1x10^{-6}$ risk range from arsenic, beryllium, PCBs, and dioxins/furans. The HI did not exceed one. Additional RI activity was completed in 1997 including soil gas survey, Geoprobe groundwater sampling, surface soil sampling, subsurface soil sampling, and surface water sediment sampling. Samples were analyzed for VOCs, SVOCs, pesticides, PCBs, and metals. Surface soil LOCs were exceeded for pesticides, PCBs, and metals. This sampling event included a large sampling grid to completely delineate PCB contamination of surface soil.

In 2000, a FS was conducted that included a baseline ecological risk assessment that determined that exposure to lead and DDT in soil could lead to elevated hazards for avian species. The FS also selected PCBs as a COC based on risk to human health. Site specific RGs were developed for these compounds. The FS examined a vegetative soil cover, an asphalt cover, and excavation and disposal of soils contaminated with PCBs above NJDEP criteria and lead and DDT above a site specific ecological action level. A proposed plan has also been completed for this site and public notice was completed in July 2001. A ROD was prepared in summer 2001 and signed in spring 2002. In order to complete the design of the soil cover additional delineation sampling was completed in summer 2001. Some of these samples contained PCBs at much greater concentrations (3,500 mg/kg) than were seen in the 1997 soil grid sampling (297 mg/kg). Soils containing PCBs at concentrations over 297 mg/kg will be excavated and disposed of off-site. Site groundwater is being addressed in PICA 205.

The vegetated soil cover was completed in 2003.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
DDT, LEAD, PCBs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI/FS
CURRENT IRP PHASE:
RIP (2002) with LTM
FUTURE IRP PHASE:
RIP (2002) with LTM

PROPOSED PLAN

Cap maintenance and institutional controls will be maintained in accordance with the LUCIP in the PP.

PICA-067, Site 25
Sanitary Landfill (Near Site 26)

SITE DESCRIPTION

Site 25 is located within the central valley of PTA, it consists of ~8 acres. The area has been divided into four sections; the southern borrow area, the landfill area, the Dredge Pile (RI Site 26, PICA-068) and the northeast area. PICA-068, the Dredge Pile, has been combined with this site (PICA-067). All issues associated with the Dredge Pile will be addressed under this site. Therefore, PICA-068 is considered response complete. The southern borrow area consists of a 2-acre grass-covered clearing formerly used for landfilling. The Dredge Pile encompasses ~2000 ft^2, near the center of the site and is ~15-20 ft high. A variety of wastes were disposed of at Site 25 from the 1940s through the 1970s. These wastes included rubbish, industrial wastes, shells, and sewage treatment plant sludge. The landfill was closed and covered in 1972. The site is currently inactive.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
Metals, VOCs, Pesticides, PAHs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS (funded(
FUTURE IRP PHASE:
RA, LTM

A remedial investigation was completed for the site in 1994. The field portion of this remedial investigation consisted of a geophysical survey, radiological survey, soil gas survey, soil sampling, test pitting, monitor well installation and groundwater sampling. A HHRA and ERA were also conducted a part of the RI. The HHRA determined that the cancer risk was between $1x10^{-4}$ and $1x10^{-6}$ mainly associated with PAHs. The RI report concluded that the site should proceed to FS to address human health risk associated with SVOCs, dioxins/furans, metals, and PCBs. Ecological risk modeling indicated the potential for impact to terrestrial species from metals.

A FS was initiated to address these issues, but was stopped due to inadequate delineation of soil contamination and marginal risk associated with the site. In order to facilitate the performance of the FS, additional delineation of PAH contaminated soil was performed in 1997 to delineate PAH contamination in the northeast corner of the site. To determine the best course of action in light of all data and the level of risk associated with the site, a risk management plan was drafted in 2000. The risk management plan determined that human health risk resulting from PAH contaminated soils was within the risk range $1x10^{-4}$ to $1x10^{-6}$. It also determined that metals and pesticide-contaminated soils could potentially drive ecological risk. Based on these concerns, the risk management plan recommended that a feasibility study be performed.

The FS was finalized in 2003. The FS recommended extending a parking lot to cover the PAH-contaminated soil.

PROPOSED PLAN

Funding for PICA-067 (Sites 25) and PICA-068 (Site 26) are combined under this site.

The area will be covered with asphalt. Institutional controls will also be maintained as part of the remedy. A Proposed Plan was submitted to the regulators in fall 2003.

Potential groundwater concerns are being addressed under PICA-206.

PICA-069, Site 27
Propellant/Chem/Material Storage

SITE DESCRIPTION

Site 27 consists of the former salt storage building, T-90, and the area surrounding the building. The site is located at the intersection of Shinkle Road and Fourth Avenue. Green Pond Brook is immediately adjacent to the site on the southeast. Building T-90 was a Quonset hut constructed of corrugated steel with an asphalt floor area of approximately 3,000 ft^2. The date of construction is unknown; however, it is known that it was constructed prior to 1970 and was demolished in 1993. All road salt and cinders were likely removed in the late summer/fall of 1983, and moved to the newly constructed salt storage dome (Building 307-A) built in August 1983 to avoid possible leaching of salt into Green Pond Brook. A small ditch to channel runoff from Shinkle Road, is immediately adjacent to the site on the southwest and discharges to Green Pond Brook near Shinkle Road, and a larger ditch is located approximately 350 ft to the northeast and discharges to Green Pond Brook upstream of Site 27.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS OF CONCERN:
Sodium
MEDIA OF CONCERN:
Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
LTM

There are no recorded spill/leak incidents at Site 27. However, during a 1989 site inspection conducted by Dames & Moore, it was reported that the walls of Building T-90 had corroded from the base in numerous places, providing an opportunity for entrance of precipitation and therefore leaching of the stored contents. Salt was visibly encrusted in the surface soil at this time. Soil samples were analyzed for VOCs, SVOCs, pesticides/PCBs, metals, and chloride during the 1996 PA/SI. Based upon beryllium and sodium concentrations greater than levels of concern, RI activities were conducted from 1998 to 1999 to investigate beryllium and sodium in groundwater and soil. Groundwater concentrations of sodium were at levels above levels of concern. HHRA results indicate risks and hazard are within the target levels. Ecological risk will be addressed as part of the Phase III Ecological Risk Assessment.

In 2003, PICA-185, 186, 187 and 208 were listed as response completed in AEDB-R and will be addressed under PICA-069.

PROPOSED PLAN

A FS to include a PP and ROD will be completed. Institutional controls will be recommended for all of these sites.

Part of PICA-069 = PICA-185, Site 119
Prop Storage Bldgs 46,47,48

SITE DESCRIPTION

Site 119 consists of Buildings 46, 47, and 48. These buildings are all nearly identical in structure, and were all originally used to store propellant. The three buildings are located on First Avenue east of Phipps Road, in the southwestern portion of PTA.

All three buildings are one-story, 110 ft x 38 ft structures that were previously serviced by railroad, but are currently accessed by asphalt roads. Constructed in 1940, Buildings 46, 47, and 48 were originally designed as magazines to store smokeless powder, but have also stored other types of propellant and explosives. A 1974 supply form indicated that the class and type of material being stored at Building 46 consisted of Class 2, Ammonium Nitrate, DNT, and DNMA; materials at Building 47 consisted of Class 2 NC Wet; and material being stored at Building 48 consisted of Class 2, Propellant Charge 155 MM. In early 1978, the Safety Office conducted an inspection of Buildings 46, 47, and 48, and at that time,the building contained no explosives. All three buildings were certified as having no hazardous waste in undated building certifications. Presently, Buildings 46, 47, and 48 are used as general warehouses storing general supplies and office furniture.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
Metals, Explosives
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Prior to the 1996 PA/SI, the only investigation conducted at Site 119 was a 1990 water discharge investigation, that identified no significant environmental concerns regarding water discharge activities. A PA/SI was conducted in 1996 for the analysis of VOCs, SVOCs, pesticides/PCBs, explosives, metals, and anions in soil. PAHs were detected at concentrations greater than LOC. The location of samples containing PAH contamination correspond to the locations of the former rail lines in this area. Thus, Buildings 46, 47, and 48 are included in the Arsenal-wide inactive railroad beds investigation.

In 2003, PICA-185, 186, 187 and 208 were listed as response completed in AEDB-R and will be addressed under PICA-069.

Part of PICA-069 = PICA-186, Site 120
Propellant Storage Bldg 50

SITE DESCRIPTION

Building 50 is located on First Avenue southwest of the junction of First Avenue and South Fourth Street. There are five bays with steel doors hinged on the exterior loading platform set at railroad car height, a double metal door, a roll-up door and a concrete loading dock. The building was previously serviced by railroad. Building 50 was previously used to store smokeless powder and propellant, and to pack propellant surveillance samples. Presently, Building 50 is used as a general warehouse storing general supplies and office furniture.

PTA personnel indicated that Building 50 may have been used to store one or two 55-gallon drums of motor oil or other material in the 1950s. No leaks or spills reportedly occurred from these drums. Materials stored in Building 50 included Class 2, 2A, and 7 explosives. Class 2 and 2A propellants were also reportedly stored in the building. During interviews conducted by ANL, PTA personnel reported that containers of propellant were taken outdoors and opened on the ground.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
Explosives
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Prior to the 1996 PA/SI, the only investigation conducted at Site 120 was a 1990 water discharge investigation that identified no significant environmental concerns regarding water discharge activities. A PA/SI was conducted in 1996 for the analysis of VOCs, SVOCs, pesticides/PCBs, explosives, metals, and anions in soil. PAHs were detected at concentrations greater than LOC. Building 50 is included in the Arsenal-wide inactive railroad beds investigation.

In 2003, PICA-185, 186, 187 and 208 were listed as response completed in AEDB-R and will be addressed under PICA-069.

Part of PICA-069 = PICA-187, Site 121 Chemical Storage Bldg 57

SITE DESCRIPTION

Building 57 is located on Third Avenue, at the intersection of Third Avenue and South Sixth Street. The building is a one-story, 110 ft x 38 ft rectangular structure previously serviced by railroad. Constructed in 1941, Building 57 was originally used to store smokeless powder. In 1964, it was converted into a packing and shipping building. The building currently functions as a packing and shipping building for non-hazardous materials. The building is divided into three sections: a storage area, a woodworking facility, and an office.

A June 15, 1973 SOP for the marking, packing, and shipment of Class ABC explosives indicated that only a portion of Building 57, the northern end, was used for these purposes. The woodworking area is used to build wooden boxes, pallets, and miscellaneous containers. A 1974 explosive allowance stated that the class and type of material being stored at Building 57 consisted of small quantities of Class 1-7 explosives for overnight storage. In 1978, a safety inspection determined that the building did not contain any explosives. In the 1980s, small quantities (approximately five pounds) of explosives were periodically stored in Building 57 for short periods of time, usually less than 24 hours. A 1980 memo indicated that storage in Building 57 was found to be in good condition, and storing inert material (metal parts, equipment, and general supplies).

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS OF CONCERN:
PAHs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Prior to the 1996 PA/SI, the only investigation conducted at Site 121 was a 1990 water discharge investigation, that identified no significant environmental concerns regarding water discharge activities. A PA/SI was conducted in 1996 for the analysis of VOCs, SVOCs, pesticides/PCBs, explosives, metals, and anions in soil. PAHs were detected at concentrations greater than LOC. The location of samples containing PAH contamination correspond to the locations of the former rail lines in this area. Building 57 is included in the Arsenal-wide inactive railroad beds investigation.

In 2003, PICA-185, 186, 187 and 208 were listed as response completed in AEDB-R and will be addressed under PICA-069.

Part of PICA-069 = PICA-208
DU Scrap Storage Area

SITE DESCRIPTION

This site, commonly referred to as the former Dog Pound, is located southeast of Building 70, at the intersection of two overgrown fire break/power line access roads, in the swampy area just north of the Arsenal's golf course. The former Dog Pound consisted of an asphalt pad surrounded by a chain link fence. It was used to temporarily store depleted uranium scrap, from milling operations, in Buildings 31 and 22. Radioactive waste from Building 91, and perhaps other facilities, was also temporarily stored at the Dog Pound.

As part of CHPPM's Relative Risk Site Evaluation, a radiation survey was conducted of the asphalt pad, and the access roads up to 100 feet from the pad. Radiation levels around and on the pad ranged from 6 to 10 mR/hr, which are below the off-post background radiation levels (13 mR/hr) established by CHPPM. Two anomalies were found along the access road. Both anomalies are associated with coal clinkers used as fill in the area. In addition to the radiation survey, several grid-based soil samples were collected for gross alpha and beta radiation determinations. A surface soil sample was collected from each anomaly, and one background location 100 feet northeast of the site. Soil samples were analyzed for metals, gross alpha and beta radiation. Arsenic was the only compound detected above LOCs. Groundwater samples, collected at the two radiation anomalies, contained concentrations of arsenic and lead in excess of LOCs.

Based on the results of the USACHPPM investigation, the following AOCs have been identified at the site: arsenic-contaminated surface soil, arsenic and lead-contaminated groundwater, and potential surface water and sediment contamination. In order to further characterize these AOCs, soil, groundwater, surface water and sediment samples were collected in 2000. The soil samples did not identify any site-related contamination. However, the sediment samples contained concentrations of several metals including uranium and PAHs above their respective LOCs. One groundwater sample contained an elevated arsenic level. One additional sediment sample, collected in 2001, delineated the downgradient extent of the sediment contamination. Results of a HHRA indicated the risks and hazards from soil and sediment exposure at the site are below the target levels of 1E-4 and 1 respectively.

In 2001, an additional radiological survey and soil sampling were conducted to characterize the magnitude of thorium-232 contamination related to the coal clinkers.

In 2003, PICA-185, 186, 187 and 208 were listed as response complete in AEDB-R and will be addressed under PICA-069.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS OF CONCERN:
Metals, Radiological, PAHs
MEDIA OF CONCERN:
Groundwater, Soil, Sediment
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

PICA-071, Site 29
Drum Storage Area (B31 Yard)

SITE DESCRIPTION

Site 29 is a former drum storage area located in an outside courtyard between Wings 1 & 2 near the NW corner of Bldg 31. Bldg 31 has two-stories, a concrete foundation and consists of five wings with three courtyards. Bldg 31 was a metal workshop containing various types of equipment including lathes, milling machines and drill presses. Operation of these machines generated cutting oils and machine oils, which were collected in 55-gallon drums that were stored outside the building.

A 1989, a SI was conducted. State criteria were exceeded for metals, VOCs, BNAs and TPH. A remedial investigation was conducted in 1994. No petroleum related contaminants were detected in the RI sampling. Under the RCRA program, a tank was removed and confirmatory sampling conducted. The confirmatory sampling consisted of sampling in the tank excavation and advancing soil borings in the area of contamination identified in the 1989 site investigation. In the late 1990s, follow up investigation took place to further address issues discovered in the 1989 site investigation. All tanks associated with this site have been removed. All of the courtyards at Bldg 31 are contaminated with PCBs, petroleum and SVOCs. Some wells at the site are also contaminated with petroleum.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
Metals, Petroleum, PCBs
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
RA, RA(O), LTM

The entire Bldg 31 area is being transformed in a Armament Software Center. Construction is ongoing. Regulators have been notified on the situation; institutional and engineering controls would be integrated with the new facility.

Approximately 500 tons of petroleum contaminated soils (6-10ft bgs) located off the northwest corner of Building 31 are scheduled to be removed in early FY04. Soil in the courtyards have been covered over with either concrete, aspalt or coarse gravel.

In 2003, PICA-084 was listed as response complete in AEDB-R and will be addressed under PICA-071.

PROPOSED PLAN

A FS to include a PP and ROD will be completed.

Groundwater monitoring will continue. Institutional controls will be implemented.

Part of PICA-071 = PICA-084, Site 45 Vehicle Mainteance (Bldg 33)

SITE DESCRIPTION

Site 45 consists of Building 33, located on Third Avenue between Fourth Court and Farley Street. Bldg 33 is a two-story structure, built on a concrete foundation, and has an area of 23,460 ft^2. Bldg 33 was constructed as a vehicle maintenance shop. Currently, the southern portion of the building contains a paint and body shop, as well as a vehicle wash and waste oil storage area.

Until 1970, waste disposal at the site included an in-ground sump located in the middle of the Vehicle Wash/Waste Oil Storage Area floor, which collected wastewater from floor and roof drains. The oily wastewater collected in the sump was pumped through a pipe under Fourth Court to a treatment unit in Bldg 31 (Site 39 PICA-078). Other wastes that have been accumulated at the Waste Oil Storage Area and disposed of off-site include waste radiator coolant, drained battery acid, and cloths containing oil and paint thinner. These items were sent off-post for disposal.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
Petroleum
MEDIA OF CONCERN:
Groundwater
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC

There are two other ASTs associated with Bldg 33. The AST located between the former paint shop and a storage area is connected to the floor drains, but is unused. The other AST located in the oil storage area is used to store unused or new oil. RCRA closure activities have been completed at this site. The closure activities included decontamination of the vehicle wash/waste oil storage area and the collection of one rinseate, two concrete chips, and one paint chip sample. NJDEP has approved the closure of the vehicle wash/waste oil storage area. However, other potential contamination associated with the site has been investigated in the late 1990s and will be addressed under CERCLA.

The RI found free product in a well next to an abandoned UST. The 10,000 gallon UST was removed in June 2001. The NJDEP has approved the UST report as written. A total of ~609 tons of petroleum-contaminated soils was removed and transported to Tilcon for recycling (formally Mt. Hope Recycling). Approximately 6,185 gallons of water generated from dewatering the excavation was also disposed of off-site.

An August 2003 sampling event indicated only a sheen in one well and levels of BTEX in the plume were declining, an indication that natural remediation is occurring.

In 2003, PICA-084 was listed as response complete in AEDB-R and will be addressed under PICA-071.

PICA-072, Site 31
Former Gas Station/DRMO

SITE DESCRIPTION

The site includes five buildings located on six acres of land. The site has been used as a storage yard for disposal, salvage, and sale of excess materials. A variety of items including materials used in the manufacturing and testing of explosives, pyrotechnics, and munitions, potential PCB-containing transformers, scrap metal, used batteries, and motor vehicles were stored in the area.

A 1989 site investigation was performed. The SI indicated that surface soils were contaminated with oil, grease, PCBs, metals and BNAs above LOC. Sediments were contaminated with oil, grease, BNAs, and metals.

In 1991, a RCRA closure investigation was performed on an asphalt area adjacent to Building 314, formerly used to store batteries. Closure verification samples (surface soil samples and chip samples) were collected and analyzed for VOCs and PP metals. In 1991, a RCRA closure investigation was conducted on an area formerly used to store photographic film. The area was pressure washed and chip samples were collected. Also in 1991, a RCRA closure verification sampling event was conducted at Building 314-E to evaluate an area used for storage of discarded lead batteries and equipment. The area was pressure washed and rinse and chip samples were collected.

In 1993, an investigation was conducted to evaluate the potential for contamination from metals, TPH, BTEX, and PCBs. PAHs, metals and PCBs were detected above LOC in soil, and metals were detected above LOC in groundwater.

Follow up investigation was conducted in 2000. Surface soil grid samples were collected for VOCs, SVOCs, metals, PCBs, dioxins, and explosives. Six areas of concern were found based on exceedance levels of metals, PCBs, and PAHs. Additional sampling was conducted in 2001 to delineate PCB contamination adjacent to Building 314D. Extensive PCB-contaminated soil was detected in the area. The estimated risk and hazards for the industrial research worker exceed the target levels. The primary risk and hazard drivers are PCBs. In addition, lead is deemed a concern at the site.

In 2003, PICA-116 was listed as response complete in AEDB-R and will be addressed under PICA-072.

STATUS

RRSE RATING:
High Risk

CONTAMINANTS: Metals, PCBs, VOCs, SVOCs, Cyanide, Pesticides

MEDIA OF CONCERN: Soil, Sediment, Groundwater, Surface Water

COMPLETED IRP PHASE:
PA/SI, IRA

CURRENT IRP PHASE:
RI/FS (funded), RD

FUTURE IRP PHASE:
RA, LTM

PROPOSED PLAN

A feasibility study will be completed.

At PICA-072- remediation includes hot spot excavation (PCBs-1,000cy, lead-1,000cy), capping (1.5 acre), and 600 ft riprap along the stream. This assumes 300 cy of lead-contaminated soil and 300cy PCB-contaminated soil will be disposed of off-site. The remainder of the contaminated soil will be placed under the cap.

At PICA-116- remediation includes excavation (metals-296cy).

Institutional controls will be implemented.

Part of PICA-072 = PICA-116, Site 101 Bldg 311 & 319, Former Gas Station and Storage Area

SITE DESCRIPTION

This site encompasses Buildings 311 (Gasoline Station), 319 (Safety, Surety and Environmental Office), and the paved area to the south of these buildings. Former Building 311 consisted of several gasoline pumps and a computer dispensing unit. The gasoline pumps were reportedly removed from service in June 1991. Available documents indicate that at least five USTs were affiliated with Building 311. The tanks were used for the storage of leaded gasoline, unleaded gasoline and diesel fuel. In 1989, PTA decided to close the two remaining tanks. Closure of the tanks involved removal of the tanks and ancillary piping. Confirmatory soil samples did not contain any elevated levels of BTEX or lead.

The original Building 319 was used as a storehouse for sodium nitrate. This building was destroyed in an explosion, but was rebuilt in 1926. Building 319 was reportedly utilized in the production of explosives and for the storage of gasoline products. Building 319 was also used as a vehicle dispatchers office, and for the storage of automobile tires. PTA personnel also indicated that, prior to the 1960s, this building may have also been used as a horse stable area. Since the late 1980s, Building 319 has housed the administrative offices of the Safety, Surety, and Environmental Department.

Environmental samples collected during the Phase I RI indicated concentrations of TCE in groundwater above its LOC. High levels of VOCs were reported in the soil gas samples collected throughout the site. Elevated levels of PAHs and metals were detected in the soil samples. In addition, sediment samples contained concentrations of PAHs, metals, cyanide, pesticides and PCBs in excess of LOCs. As part of the Phase I ERA, this site was characterized as having very low habitat value. However, if the land use were to change and return to usable habitat, the site could pose a significant ecological risk. Human health risk falls within the target range (1×10^{-4} to 1×10^{-6}). The hazard level exceeds the HI criterion of 1. Additional field activities performed in 2000 and 2001 identified two possible USTs near former Building 311, delineated the existing soil contamination, and investigated the elevated soil gas levels.

In 2003, PICA-116 was listed as response complete in AEDB-R and will be addressed under PICA-072.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
Pesticides, Cyanide
MEDIA OF CONCERN:
Soil, Sediment, Groundwater
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

PICA-075, Site 36
Eqpmt & Waste Storage in 3000-Area

SITE DESCRIPTION

Building 3100 was constructed as a storage facility in 1942, at the intersection of Main Road and Belt Road. From 1942 until the early 1950s, Building 3100 was used for explosives storage, and was serviced by a rail line on the west side of the building. From the early 1950s until 1975, the building was utilized as an environmental test building. Materials tested in the environmental lab included: fully loaded rocket components and ordnance items, such as solid propellant boosters and sustainers, prepackaged liquid rocket engines, and gas generators. However, no exposed explosives were tested. There is an out-of-service 5,000-gallon steel ethylene glycol AST on the building's south side. The age of the tank is unknown; however, it was most likely installed in the early 1970s. The tank has no secondary containment and is slated for removal. No information is available to indicate what the waste handling practices were at this facility during this time frame.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS OF CONCERN:
Metals, VOCs, SVOCs
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
RI/FS, LTM

Use of the building, as a waste storage facility, began in 1981 under interim status until March 1991, when PTA was granted a hazardous waste facility permit. Building 3100 is currently one of the RCRA-permitted hazardous waste storage areas at PTA. Operations in the building include sorting and overpacking of waste materials, that are picked up from various organizations throughout the post. There are no floor drains in the building.

A PA/SI was conducted for Building 3100 in 1996. Soil samples were analyzed for explosives, VOCs, SVOCs, pesticides/PCBs, anions, and metals. One soil sample contained beryllium at a concentration equal to the levels of concern. RI activities were initiated in 2000 for the analysis of VOCs, SVOCs, TAL metals, cyanide, anions, explosives, and ethylene glycol. Metals were detected at concentrations marginally above LOC in soil. No additional sampling is planned for this site.

In 2003, PICA-086, 141 and 191 were listed as response completed in AEDB-R and will be addressed under PICA-075.

PROPOSED PLAN

A FS to include a PP and ROD will be completed.

Additional wells will be installed and monitored at PICA-075. Institutional controls will be implemented.

PICA-086, 141, 191 are considered response complete.

Part of PICA-075 = PICA-086
Heavy Equipment Maintenance (Bldg 3005 & 3006)

SITE DESCRIPTION

This site consists of Building 3005, a heavy equipment maintenance facility, and Building 3006, a designated satellite waste accumulation area. In 1941, Bldg 3005 was used as a railroad roundhouse, and for the storage of construction equipment. Bldg 3005 was converted to a maintenance facility for heavy equipment in 1962, and is still used for this purpose. A pit, associated with Bldg 3005, was used by the mechanics during the repair and maintenance of locomotives. In 1976, the pit was backfilled with an unknown material. Prior to 1962, the primary substances used at Bldg 3005 were lubricating oil, coal, locomotive fluids, and fuel oil. Bldg 3006 was constructed in 1953, and has been used for storage mostly; but it was also used for a few years, in the mid-1960s, for the repair of small gas engines.

In 1991, Bldg 3005 underwent a RCRA closure and an UST closure. As part of the RCRA closure, oil drums and any other remaining materials were removed. A soil sample, collected beneath the concrete floor, contained levels of metals and TPHs in excess of NJDEP criteria. A 5,000 gallon UST, used to store #2 diesel fuel, was excavated along with ~2cy of TPH-contaminated soil. Post-excavation soil samples did not detect any TPHs.

Phase II RI activities included geophysical surveys, a soil-gas survey, excavation of two test pits, the installation of two monitoring wells, and the collection of soil and groundwater samples. The geophysical surveys conducted at the site could not identify the former waste pit or any remaining USTs. The soil-gas survey results indicated elevated VOC readings near the suspected waste oil pit. Sample analyses detected methylene chloride and lead in the groundwater, and SVOCs in the surface soil at concentrations exceeding their respective LOCs. Results of the HHRA indicate the risk and hazard from exposure to surface soil are below the target levels of $1x\ 10^{-4}$ and 1, respectively; however, the hazard from exposure to subsurface soil is equal to the threshold level. Additional samples collected in 2001 have delineated the soil contamination. No further sampling is proposed for this site.

In 2003, PICA-086, 141 and 191 were listed as response completed in AEDB-R and will be addressed under PICA-075.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
SVOCs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Part of PICA-075 = PICA-141, Site 102
Former Enlisted Mens Barracks, Bldg 3050

SITE DESCRIPTION

Building 3050 was built in 1934, and has always been used as men's barracks. The building has a dark room available for personnel to develop photographs. Waste materials generated, at Building 3050, come from photographic development activities performed in the dark room. These wastes include photographic developers, stop bath, and fixing/clearing solutions. According to PTA personnel, an oil and lube rack was once located on the western or southern side of Building 3050, and was used to change automobile fluids and oil. The rack was removed and the area backfilled between 1983 and 1984. Other potential sources of contamination at this site include a former #2 fuel oil UST, which was removed in 1993; a transformer, and a former sewage spill.

Phase II RI activities conducted at this site included the performance of a geophysical survey, the excavation of one test pit, the performance of a soil-gas survey, the installation of two monitoring wells, and the collection of soil and groundwater samples. During the RI, a test pit excavated in the parking area of Building 3050 discovered an UST with approximately a 500 gallon capacity, about one foot below the asphalt pavement. The UST was subsequently removed by another contractor. Xylenes and chlorinated solvents were identified in individual soil-gas samples. Lead was detected above LOCs in soil and groundwater samples collected at the site. In addition, elevated concentrations of SVOCs and other metals were identified in the soil. A soil bioassay conducted as part of the Phase II ERA did not reveal adverse effects to the earthworms, although the maximum concentrations of several pesticides and PCBs were detected in the earthworm tissue. The extent of contamination was delineated in 2002. A HHRA will be completed for the site.

In 2003, PICA-086, 141 and 191 were listed as response completed in AEDB-R and will be addressed under PICA-075.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
Metals, SVOCs
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Part of PICA-075 = PICA-191, Site 188
Former Coal Storage Area Bldg 3173

SITE DESCRIPTION

Building 3173 is located along Main Road in the Navy Hill section of the arsenal. Building 3173 was originally constructed by the Navy as a carpentry shop in 1902. The building was transitioned from Naval to Army ownership in the early 1960s. Since 1902, Building 3173 has been used as a carpentry shop, lab/test facility, general purpose storage facility, youth center, and office space. The building has a coal storage area behind it, which was used for the Building 3013 power plant from approximately the 1930s until the 1960s. The bunker is surrounded on three sides by concrete walls, with an unlined floor. Materials associated with Building 3173 included coal, small ordnance items, and potentially small amounts of solvents such as acetone, paints, and thinners.

Two USAEHA investigations were conducted, at Building 3173 in 1991, for TPH, BNAs, and oil/grease in soil. Numerous samples collected contained TPH above the detection limit, and the report determined the site should be capped with 12 inches of topsoil and grass. A PA/SI was conducted in 1996 to evaluate VOCs, SVOCs, pesticides/PCBs, explosives, metals and anions in surface soil. PAHs and metals were detected at concentrations greater than LOC. Based upon results of the PA/SI, PICA-191 was included as part of the Phase III 2A/3A RI. As part of the RI sampling program, surface soil, subsurface soil, sediment, surface water, and groundwater samples were collected for the analysis of VOCs, PAHs, metals, and radiological parameters. Surface soil and surface water contained concentrations of metals and PAHs in excess of respective LOCs, and groundwater contained metals at levels greater than LOC. Additional soil, surface water, and sediment sampling were conducted in 2001-02 to complete the delineation of existing contamination. Results of a HHRA indicate the risk from surface soil exposure at the site exceeds the target level of 1E-4. The primary risk drivers are PAHs. Risks from subsurface soil and sediment exposure are below the target level. Hazards are below the target level of 1 for all three exposure scenarios.

In 2003, PICA-086, 141 and 191 were listed as response completed in AEDB-R and will be addressed under PICA-075.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS OF CONCERN:
PAHs, Metals
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

PICA-076/120, Site 37
Former Metal Plating Wastewater Treatment Facility/Lagoons B-24 (Area D GW)

SITE DESCRIPTION

Site 37 consists of a former wastewater treatment facility and lagoons associated the metal plating activities formerly housed in Building 24. The lagoons were suspected to have leaked, and were closed under interim status in 1981. This closure included excavation of 317 yd^3 of soil. Final closure of the Building 24 surface lagoons occurred in 1991 including demolition of the concrete basins and excavation of additional soils. The action removed 660 yd^3 of soil and 240 yd^3 of concrete. The regulators have accepted this closure. A dry well which never had interim status was constructed in 1961, and was closed in 1991 in accordance with NJ Hazardous Waste Regulations. The closure of the dry well has been accepted by the regulators.

There have been numerous investigations of the TCE plume at this site. Two wells were sampled for metals and anions from 1958 to 1985. From 1981 to 1985, 21 wells were installed and sampled for VOCs, phenol, metals, anions, and cyanide. LOCs were exceeded for metals and VOCs. In 1986, a drive point investigation was completed and indicated high levels of VOCs. In 1987, streambed piezometers and 33 additional wells were sampled for VOCs and metals. It was determined that VOCs were discharging to GPB. In 1989, 23 monitoring wells were installed and sampled for VOCs. Between 1990 and 1992 an additional 69 samples were collected from existing wells. In 1992, an interim remedial action was initiated when a hydraulic barrier pump and treat system was installed to impede the flow of TCE to GPB. This plant has been in operation since 1992, and wells have been sampled for VOCs quarterly from 1992 to 2000 and are currently sampled semiannually. In 1994, a remedial investigation was completed and a round of samples was collected from existing wells and one new well. The 1994 HHRA found cancer risk between or above the $1x10^{-4}$ to $1x10^{-6}$ range (assumes direct groundwater use). Pilot scale remedial technology studies have been carried out by the USGS including air sparging, methane sparging, and surfactant treatment.

In 1997 a feasibility study data gap investigation determined the applicability of MNA. A FS and flow and transport model were completed. The feasibility study examined P&T, six phase heating with SVE, accelerated bioremediation, MNA, and reactive barrier wall. The FS determined that MNA would take an extended period (>100 years). A revision to the draft FS that examined more aggressive treatment alternatives was submitted in summer 2001. Based on this analysis, the preferred alternative is the reactive barrier wall. Two pilot studies (propane and HRC) will be completed in 2004, to investigate potential techniques to address residual accessible source area contamination, thereby reducing overall cleanup times. Additionally a geotechnical investigation was performed in fall 2002 and be included in the PRB design. The FS for Area D Groundwater was finalized in may 2003 and has been accepted bt the regulators. The Proposed Plan was finalized in July 2003 and sent to public notice. A ROD was submitted to the regulatory agencies in fall 2003.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
VOCs
MEDIA OF CONCERN:
Groundwater
COMPLETED IRP PHASE:
PA/SI, RI/FS
CURRENT IRP PHASE:
IRA, RA, RA(O)
FUTURE IRP PHASE:
IRA, RA(O)

PROPOSED PLAN

The ROD is expected to be signed by April 2004. The groundwater treatment plant (P&T) is expected to be turned off in 2004.

A permeable treatment wall will be installed, and monitored natural attenuation is expected to follow.

PICA-077, Site 38
Plating & Etching WWT Fac (B-95) (Area E GW)

SITE DESCRIPTION

Site 38 consists of the former underground treatment tanks within Building 95 and Area E groundwater. All AOCs at this site have been combined with Site 22 (PICA 010) with the exception of contaminated groundwater. Building 95 served as a circuit board etching operation from 1961 to 1988. Manufacturing at Building 95 consisted of electro-plating operations. The wastewater discharged into the treatment system where it was stored and treated in nine USTs. These tanks were constructed of concrete, and in some cases lined with brick and/or epoxy lining systems. Integrity testing of the seven tanks was conducted in 1988. All tanks failed and were removed from service. As a result, the nine USTs were filled with concrete as part of RCRA closure activities in 1991. The NJDEP approved these activities.

There have been numerous studies conducted at Site 38 as well as on Area E groundwater. Only the significant investigations are summarized here. Site 38 sampling included confirmatory samples collected during the RCRA closure of the tanks and subsurface soil samples collected as part of tank removal. Areawide previous studies included surface water and sediment samples collected for metals, VOCs, and water quality parameters. Piezometers were sampled for VOCs. In the Phase I RI, sediment samples were collected for VOCs, BNAs, metals, and pesticide/PCBs. Groundwater investigations included installation and sampling of 45 wells before 1989, 32 additional wells in 1989 and three rounds from 26 existing wells in 1994. The results of this sampling indicated that metals and VOCs were above LOCs. The HHRA found the carcinogenic risk between or above the $1X10^{-4}$ to $1x10^{-6}$ (based on on-site consumption) range based on VOCs, metals and PCBs. Quarterly sampling has been conducted on 7 wells for VOCs since 1995. In 1999 a feasibility study data gap investigation sampled 36 wells, surface water, and minpiezometers for VOCs. A smaller number of wells were sampled for metals and redox parameters.

The levels of chlorinated solvents exceed MCLs and New Jersey groundwater standards. Green Pond Brook is acting as a barrier to contaminant transport, however levels detected in the brook are below surface water criteria. The feasibility study evaluated monitored natural attenuation, pump and treat, chemical oxidation, and air sparging with SVE. Currently, the proposed remedy is MNA. A bench scale evaluation of chemical oxidation was completed in 2002. The final FS incorporates this new data and proposes monitored natural attenuation as the final remedy. A Proposed Plan was submitted to the regulators in fall 2003.

In 2003, PICA-010 was listed as response complete in AEDB-R and will be addressed under PICA-077.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS:
VOCs
MEDIA OF CONCERN:
Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS (funded), LTM
FUTURE IRP PHASE:
LTM

PROPOSED PLAN

The monitored natural attenuation remedy will consist of sampling ~12 wells for VOCs quarterly for 2 year then annually.

Part of PICA-077 = PICA-010, Site 22
Bldg 95 Former Waste Impoundments

SITE DESCRIPTION

Site 22 encompasses an area formerly occupied by 2 unlined sandfilter lagoons and one unlined sludge drying bed (jointly referred to as the impoundment units). The former surface impoundment units were components of a treatment system for wastewater generated at Bldg 95, Site 38, a circuit board etching facility (PICA-077). The units received precipitated metal sludge directly from the Bldg 95 treatment tanks from 1961 to 1981. The effluent contained TCE, 1,1,1-TCA, cyanide, and heavy metals including chromium and copper. After passing through the sandfilter and lagoons, the filtered wastewater stream flowed by gravity into a drainage ditch that ultimately discharged into Green Pond Brook. The discharge was permitted under the NPDES.

As of 1980, both lagoons and the sludge bed were registered with NJDEP as RCRA hazardous waste surface impoundment units. The impoundments underwent an interim closure in 1981 and final closure in 1990 that was approved by the regulatory agencies. This closure remediated all piping and material in and beneath the impoundments, but not surrounding soil and sediment. A RI was conducted in 1994 and included the collection of surface soil, subsurface soil and groundwater for VOCs, BNAs and metals. As part of the 1994 RI, no detected analytes in surface or subsurface soil exceeded LOC.

Additional RI work was completed in 1997 as a result of regulatory comment to the 1994 RI. The 1997 investigation identified metals contaminated sediment. To identify the path forward in the CERCLA process a risk management plan was drafted in 2000. The risk management plan concluded that due to limited habitat, adverse ecological impact is not likely, however, elevated levels of metals may suggest adverse impact to terrestrial and aquatic species. Human health risk was between $1x10^{-4}$ and $1x10^{-6}$ with a hazard index of less than one. The Army and regulatory agencies have agreed that this site can proceed directly to proposed plan with institutional controls as the remedy. A proposed plan is scheduled to be submitted in late 2003. In 2003, PICA-010 was listed as response complete in AEDB-R and will be addressed under PICA-077.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
VOCs, Metals
MEDIA OF CONCERN:
Soil, Sediment
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

PICA-079, Site 40
Ordnance/Explosive Bldgs 800 Area

SITE DESCRIPTION

This site consists of Building 809, a wastewater treatment plant, and Building 810, a melt-pour facility for large projectiles. Bldg 809 was constructed in 1944 for use as a large caliber projectile washout facility. Washout operations included the steam cleaning of off-specification projectiles. Explosives-contaminated wastewater from shell washout operations was discharged to a nearby leaching pool, which eventually discharged to Picatinny Lake. Bldg 809 was later converted to its current use, a Wastewater Treatment Plant for treating explosives-contaminated wastewater.

Bldg 810 was constructed in 1930 for use as an operating facility. The building was renovated in 1940 for its current use as a melt-pour facility. Operations, at Bldg 810, involve melting explosives in kettles and pouring the explosives into projectiles, and transporting the projectiles by conveyor to a cooling bay. Three transformers located on the southwest side of Bldg 810 reportedly contained PCBs.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
Explosives, Metals, SVOCs, PCBs
MEDIA OF CONCERN: Soil, Sediment, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
RI/FS, RD, RA, LTM

Phase II RI activities included the installation of five monitoring wells and the collection of soil, groundwater, surface water and sediment samples. Explosives and metals were reported at concentrations exceeding LOCs in groundwater and soil, over an extensive area, to the east of Bldgs 809 and 810. Elevated levels of explosives and metals were also detected in the surface water and sediment samples collected adjacent to the site, probably due to overland runoff and erosion of contaminated soil discharging to Picatinny Lake. Soil and sediment bioassays, conducted as part of the Phase II ERA, found 100% mortality in the test organisms. In addition, large portions of the site are devoid of vegetation, suggesting that the soil contamination is also toxic to vegetation. The installation of two bedrock monitoring wells, and the collection of additional groundwater samples, during the Group 1 RI helped define the extent of the groundwater contamination. Results of the HHRA indicate that the risk and hazard from exposure to impacted site media are above the target levels of $1x\ 10^{-4}$ and 1, respectively. The risk and/or hazard drivers are RDX and 2,4,6-TNT in soil and 2,4,6-TNT in groundwater. Field work to address data gaps was conducted in summer 2002 and the Group I FS will be submitted in late 2003 to address Groupwide contamination.

In 2003, PICA-139, 151 and 152 were listed as response complete in AEDB-R and will be addressed under PICA-079.

PROPOSED PLAN

A FS, PP and ROD will be completed. A pilot study for HRC is expected.

At PICA-079 remediation is expected to be soil removal, HRC injection and with long term monitoring.

At PICA-152 remediation is expected to be soil removal.

PICA-139 and 151 are considered response complete.

Part of PICA-079 = PICA-139, Site 93
Ammunition Demo 1 Ord Facility, Bldgs 800,807

SITE DESCRIPTION

This site, which borders Picatinny Lake, consists of Building 800 and Building 807. Building 800 was originally used for loading submissiles (cluster bombs) into warheads. In 1978-1979, the building was converted to an ammunition tear-down facility. In the 1980s, Building 800 performed routine and experimental stability tests of smokeless powder and high explosives. In addition, the building was used to conduct surveillance tests on master samples of all lots of propellant powders in storage. Currently, the building is used for the decontamination of energetically contaminated metal parts, using an air decontamination procedure. Four explosive-related accidents have occurred at Building 800. The explosions have not destroyed the building, but have spread ordnance around the area, including the lake.

Building 807 was constructed in 1930 as a receiving, cleaning, and inspection facility for explosives arriving at PTA by train. During World War II, operations at Building 807 changed to production and manufacturing. Currently, Building 807 is used for cold storage and to stage packing materials for Building 820.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS:
Explosives, Lead
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Phase II RI activities included installation of three monitoring wells, performance of a geophysical survey, excavation of test pits, performance of a soil-gas survey, and collection of soil, groundwater and sump samples. RDX was detected at concentrations exceeding LOCs in the soil and groundwater samples. Explosives and metals were identified at concentrations above LOCs in sediment samples collected from a sump and a former dry well. In addition, ordnance were discovered in a test pit at the eastern end of the site. Groundwater samples collected during the Group 1 Sites RI, in 1998, confirmed the elevated levels of RDX. Results of the HHRA indicate that the risks and hazards from exposure to site soil equal or exceed the target levels of 1×10^{-4} and 1, respectively. The hazards associated with exposure to contaminated sediment within the sump also exceed the target level of 1, but actual exposure to the impacted sediment is expected to be minimal.

Additional sampling was performed in 2002 to characterize the sediment in Picatinny Lake and to delineate the extent of the existing soil contamination. A removal action was performed to remove and dispose of the contaminated sediment within the sump and former dry well. The dry well was excavated during installation of a gas pipeline into Building 800. This site is included as part of the Group 1 FS to be completed in late 2003.

In 2003, PICA-139, 151 and 152 were listed as response complete in AEDB-R and will be addressed under PICA-079.

Part of PICA-079 = PICA-151, Site 156 Ordnance Facility, Bldgs 813, 816, 816B

SITE DESCRIPTION

This 1.7-acre site consists of Buildings 813 and 816, used as large-caliber projectile loading plants, and Building 816-B, an inert storage facility. All three buildings are located along the western shore of Picatinny Lake. Buildings 813 and 816 are currently active. Building 816-B is an inactive magazine.

Two process tanks and a holding tank are located beneath Building 813. These open-top ASTs are located outside the building, under a portion of the building supported by wooden pilings. Water from washdown activities was collected by gutters and discharged into the holding tank. The tanks are no longer in use. According to the PTA transformer database, one of the transformers located southwest of Building 813 contained PCBs.

Two process tanks are also located beneath Building 816. These open-top ASTs are located outside the building, under a portion of the building supported by wooden pilings. These tanks are no longer in use. According to the PTA transformer database, five of the six transformers located northwest of Building 816 contained PCBs.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS:
Explosives, SVOCs, Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Phase II RI activities and subsequent Phase II ERA and Group 1 activities have included the installation of two monitoring wells; collection of soil, groundwater, surface water and sediment samples; and the performance of sediment bioassays. SVOCs, explosives, and metals were detected in the soil at concentrations exceeding their respective LOCs during the Phase II RI. Results of the HHRA indicate the risk and hazard from exposure to surface soil are above the target risk level of 1×10^{-4} and equal to the target hazard level of 1. The cancer and hazard driver is arsenic. No statistically significant toxicity was observed in the sediment bioassays. Additional RI sampling was conducted in 2001 to delineate the extent of metals contamination in the soil. Surface water and sediment contamination, identified in Picatinny Lake along the site shoreline, will be addressed under Site PICA-057, Picatinny Lake. Risks and hazards from exposure to impacted surface water and sediment are below the target levels. This site is included as part of the Group 1 FS to be completed late 2003.

In 2003, PICA-139, 151 and 152 were listed as response complete in AEDB-R and will be addressed under PICA-079.

Part of PICA-079 = PICA-152, Site 157 Ordnance Facility Bldg 820, 823

SITE DESCRIPTION

This site consists of Buildings 820 and 823. Both buildings, located along the western shore of Picatinny Lake, were used as large-caliber projectile loading plants. Bldg 820 was constructed in 1930 as a packing and shipping facility for the completed rounds loading production line. Bldg 820 has been reactivated as an ammunition repack and surveillance facility. Ammunition materials are inspected and problem lots pulled for disassembling and repacking. Bldg 823 was constructed in 1930 for the loading of melted TNT and RDX explosives into shells positioned on a conveyor. Wastewater and washdown water generated at the building were discharged to collection boxes, which ultimately discharged to Picatinny Lake.

A 1965 internal investigation cited volumes of wastewater flowing over the surrounding terrain. Investigations conducted in 1974 found excessive condensation of explosives, from the melt kettles, collecting on the building ceiling. In another 1974 report, cracks in the floor were found to contain energetic materials.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
Explosives, Mercury
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

During the Phase II RI, explosives were detected at Bldg 823 in groundwater, soil, surface water, and sediment at concentrations exceeding LOCs. The installation of a bedrock monitoring well, and the collection of additional groundwater samples during the Group 1 RI, helped define the extent of the groundwater contamination. Results of the HHRA indicate that the risk and hazard from exposure to impacted site media are above the target levels of 1×10^{-4} and 1. The risk/hazard driver is RDX. Results of the bioassays indicated statistically significant toxicity in the soil and sediment samples. The decreased survival rates are considered to be evidence of adverse ecological effects. Field work, to address data gaps in the evaluation of remedial alternatives for this site, was completed in summer 2002. This site is included in the Group 1 FS to be completed in late 2003.

In 2003, PICA-139, 151 and 152 were listed as response complete in AEDB-R and will be addressed under PICA-079.

PICA-085, Site 46
Bldgs in 500 Area

SITE DESCRIPTION

Building 507 was constructed in 1929 for use as a train engine maintenance facility. From 1987 to the present, Bldg 507 has been used as a garage facility for utility line maintenance vehicles. Waste materials, such as waste oil and spent cleaning solvents, were reportedly stored in 55-gallon drums in a shed adjacent to the eastern side of the bldg.

In 1991, a RCRA closure was performed for the shed. Elevated levels of SVOCs and metals were reported in the soil samples around the shed. The Phase II RI, conducted in 1996, included the performance of a geophysical survey, the performance of a soil-gas survey, the installation of one monitoring well, and the collection of soil and groundwater samples. Results of the geophysical survey did not identify any USTs at the site. No soil-gas analytes were detected above the reporting limits. The RI also identified SVOC and arsenic contamination in the soil around Building 507. Results of the HHRA, performed for this site, indicate that the risk from exposure to surface soil equals the target level of 1×10^{-4} with arsenic as the primary risk driver. Additional samples, collected in 2001, could not delineate the extent of the arsenic contamination; additional sampling is not possible due to the presence of underground utilities and overhead power lines. The analytical data collected in 2001 will be used to perform a site-specific risk assessment.

In 2003, PICA-064, 073, 074, 140, 142, 146, 148, 149, 150 and 156 were listed as response complete in AEDB-R and will be addressed under PICA-085.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
SVOCs, EXplosives, Metals
MEDIA OF CONCERN:
Soil, Sediment, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
RI/FS, LTM

PROPOSED PLAN

A FS to include a PP and ROD will be completed. Institutional controls will be recommended as a remedy for this site.

PICA-064, 073, 074, 140, 142, 146, 148, 149, 150 and 156 are considered response complete.

Part of PICA-085 = PICA-064, Site 147 Poach House (520)

SITE DESCRIPTION

Building 520 was constructed in 1943 for use as a poaching house for NC water slurry processing. Poaching is a purification process used in the manufacturing of propellant to destroy unstable sulfur esters and completely remove free acids. Poaching operations continued at Bldg. 520 until 1956. In September 1972, the explosive allowance for Bldg. 520 was cancelled. The building was deactivated in the mid-1970's and subsequently demolished under TECUP.

The wastewater generated during the poaching process, at Building 520, was reportedly disposed of, in pits, in the basement of the building. In addition, PTA documentation indicated that liquid waste, containing TNT, may have been discharged from the building into an underground pipeline (i.e., Guncotton Line) that flowed toward Picatinny Lake and Green Pond Brook. According to PTA personnel, a discharge of nitrocellulose also flowed into the Guncotton Line and may have entered Picatinny Lake.

Phase II RI activities included the installation of two monitoring wells and the collection of soil and groundwater samples. Beryllium and lead were detected in the soil around the building at concentrations slightly above LOCs. Results of a HHRA for soil exposure, at the site, indicated that the risks and hazard indices are below the target levels of 1×10^{-4} and 1, respectively. NJDEP and EPA have not requested any additional sampling at this site, and no further investigation is proposed for this site. An FS may be necessary to address soil contamination above LOCs.

In 2003, PICA-064, 073, 074, 140, 142, 146, 148, 149, 150 and 156 were listed as response complete in AEDB-R and will be addressed under PICA-085.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Part of PICA-085 = PICA-073, Site 32 Bldg 553 Storage Tanks

SITE DESCRIPTION

Building 553 was constructed in 1942, as an open structure, to house 11 ASTs. The primary function of the tanks, in Building 553, was to support the manufacturing of nitrocellulose, which took place in the surrounding buildings. The eleven tanks are believed to have ranged in capacity from 3,000 to 10,000 gallons. These tanks were used to store ether, alcohol, diesel fuel, unknown process wastes, mixed solvents, and spent solvents containing explosives and propellant wastes. Use of the tanks ceased sometime before 1980, and the tanks were removed in 1991 as part of a clean RCRA closure. Building 553 was subsequently demolished under the TECUP program.

The RI conducted at this site, in 1996, included a soil-gas survey, the installation of two monitoring wells and the collection of soil and groundwater samples. Sample analysis did not identify any chemicals above their respective LOCs, and no additional sampling is proposed. Results of the HHRA for soil exposure indicated that the risks and hazard indices are below the target levels of 1×10^{-4} and 1, respectively.

In 2003, PICA-064, 073, 074, 140, 142, 146, 148, 149, 150 and 156 were listed as response complete in AEDB-R and will be addressed under PICA-085.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS:
None
MEDIA OF CONCERN:
None
COMPLETED IRP PHASE:
PA/SI, RI, IRA
CURRENT IRP PHASE:
RC - 2003

Part of PICA-085 = PICA-074, Site 33
Bldg 527A, Storage Tanks

SITE DESCRIPTION

Building 527A, formerly located on the southeast shore of Picatinny Lake, operated as a pump house for Building 527. Two steel ASTs were housed in an open, A-frame building, just east of the pump house. The ASTs, which had a combined capacity of 6,325 gallons, stored spent ethyl alcohol contaminated with nitrocellulose from Building 527. The spent ethyl alcohol was conveyed to the ASTs via an aboveground conveyance. In 1991, the ASTs were removed and the building was demolished as part of a RCRA closure.

A site investigation, conducted in 1988, found that surface soils at Building 527-A were contaminated with explosives. Soil samples, collected during the RCRA closure, identified levels of base neutrals and lead in excess of NJDEP criteria. NJDEP reported that the subject area would require further action. The RI conducted at this site, in 1996, included the installation of one monitoring well and the collection of soil, groundwater, surface water and sediment samples. Sample analyses have identified arsenic concentrations in surface and subsurface soil in excess of LOCs. Additional sampling was performed in 2001 to delineate the extent of the arsenic contamination. SVOCs and metals contamination identified in surface water and sediment samples, collected adjacent to the site in Picatinny Lake, will be addressed as part of PICA Site 57 – Picatinny Lake. Human health risk assessment results associated with soil, sediment and surface water exposures at the site are below target levels of 1×10^{-4} and 1, respectively. Results of a sediment bioassay did not indicate significant toxicity to the test organisms as compared to the laboratory control and reference samples. No additional investigation is proposed for the site.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
Arsenic
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI, IRA
CURRENT IRP PHASE:
RC - 2003

In 2003, PICA-064, 073, 074, 140, 142, 146, 148, 149, 150 and 156 were listed as response complete in AEDB-R and will be addressed under PICA-085.

Part of PICA-085 = PICA-140, Site 97
Post Eng Maint Shop, Bldg 501

SITE DESCRIPTION

Building 501, located approximately 150 ft south of the southern end of Picatinny Lake, has served as a maintenance shop for repairing pumps. According to PTA personnel, pump oil and mercury were spilled onto the floor during pump repairs and cleaned up. During excavation activities in January 1990, a 5-gallon pail of an unknown substance was unearthed. Approximately 1 pint of the substance had leaked onto the ground. The substance tested negative for energetics (i.e., explosives). The affected area was subsequently cleaned up, and the unknown substance was placed in an overpack drum for offsite disposal.

Phase II RI activities, conducted at this site in 1996, included the drilling of one soil boring, and the collection of surface and subsurface soil samples from the boring to characterize the spill area. The spilled oil or unknown substance is the likely source of elevated SVOC concentrations detected in the soil during the RI. Results of a HHRA indicate the risks and hazards from soil exposure at the site are below the target levels of 1×10^{-4} and 1, respectively. Additional sampling was conducted in 2001 to delineate the extent of the elevated SVOC levels. A feasibility study will be proposed to address the soil contamination.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS:
SVOCs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

In 2003, PICA-064, 073, 074, 140, 142, 146, 148, 149, 150 and 156 were listed as response complete in AEDB-R and will be addressed under PICA-085.

Part of PICA-085 = PICA-142, Site 105 Propellant Plant, Bldg 511

SITE DESCRIPTION

Building 511 was constructed in 1942 as a nitrating house and propellant production plant. Building wastewater was conveyed to a sump located inside the building. Building 511 had been inactive since 1959 and was destroyed under TECUP. PTA personnel reported that transformers were removed at Building 511 prior to its demolition. PTA personnel also reported oils contaminated with PCBs were spilled in the area, but the origin of the spill is unknown.

Phase II RI activities conducted at this site, in 1996, included the collection of soil and sump samples. During the RI, PAHs and lead were detected in the soil at concentrations greater than their LOCs. Marginal exceedances were reported for several metals in the sediment sample collected from the sump. Additional sampling performed in 2000 successfully delineated the lead contamination; however, additional sampling was necessary in 2001 to delineate the extent of the PAH soil contamination. A risk assessment will be completed to determine the risks and hazards posed by the residual contamination at the site. A feasibility study will be proposed to address the impacted soil at the site.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS:
PAHs, Lead
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

In 2003, PICA-064, 073, 074, 140, 142, 146, 148, 149, 150 and 156 were listed as response complete in AEDB-R and will be addressed under PICA-085.

Part of PICA-085 = PICA-146, Site 113 Propellant Plant, Bldg 561

SITE DESCRIPTION

Building 561 was a five-story structure, which was constructed in 1931. The building was located on the eastern shore of Picatinny Lake. It is not known how long Building 561 was in operation, but records indicate that the building was in operation, during 1960, as a blending facility for propellants. The nature of the operations that occurred in the building, and the documented use of spray nozzles in this building, suggest that wastewater was likely to have been generated and probably discharged to the lake. Building 561 was demolished under TECUP prior to 1988.

Phase II RI activities conducted at this site in 1996 included the installation of one monitoring well and the collection of soil, groundwater, surface water and sediment samples. SVOCs, explosives, metals and ammonia were detected at concentrations exceeding their respective LOCs in surface water and sediment samples collected from Picatinny Lake, which borders the site. A deep sediment sample was collected in 2001 to vertically delineate the contamination. These concentrations will be addressed under PICA-057, Picatinny Lake. No exceedances were reported in the soil or groundwater samples. Results of a HHRA for soil exposure did not report any risks or hazards above the target levels of 1×10^{-4} and 1, respectively. However, a HHRA performed for surface water and sediment exposures identified potential hazards from exposure to surface water and sediment within Picatinny Lake adjacent to the site that exceeded the target level. As part of the Phase II ERA, one sediment bioassay exhibited total mortality of the test organisms, while a second bioassay did not detect any significant toxicity, suggesting a toxic hot spot exists in Picatinny Lake, adjacent to the site.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS:
SVOCs, Ammonia, Metals, Explosives
MEDIA OF CONCERN:
Sediment, Surface Water
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

In 2003, PICA-064, 073, 074, 140, 142, 146, 148, 149, 150 and 156 were listed as response complete in AEDB-R and will be addressed under PICA-085.

Part of PICA-085 = PICA-148, Site 148
Change House Bldg 527

SITE DESCRIPTION

Building 527 was constructed in 1929 for use as part of the smokeless powder production line. According to PTA personnel, single- and double-base solid propellants were processed in the building. The solvent recovery drainage system discharged to a dry well, located approximately 10 ft from the north-west corner of the building. Operations at Building 527 reportedly ceased in the mid-1970s.

In 1991, a RCRA closure was performed to decontaminate the interior of the building. Based on the results of confirmatory samples, the NJDEP reported the closure area did not require further action. The building was recently demolished under TECUP in 2000. Phase II RI activities conducted at this site in 1996 included performance of a geophysical survey, excavation of a test pit, installation of three monitoring wells, and the collection of soil and groundwater samples. Elevated levels of SVOCs; 2,4-DNT, and several inorganic compounds were detected in the surface soil at the site during the Phase II RI. Results of a HHRA found that the risks and hazards from exposure to surface soil at the site exceed the target levels of 1×10^{-4} and 1, respectively. The main risk drivers are arsenic and manganese. Additional sampling was conducted in 2001 to delineate the extent of the soil contamination.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
Metals, Explosives, SVOCs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

In 2003, PICA-064, 073, 074, 140, 142, 146, 148, 149, 150 and 156 were listed as response complete in AEDB-R and will be addressed under PICA-085.

Part of PICA-085 = PICA-149, Site 149
Propellant Plant Bldg 541

SITE DESCRIPTION

Building 541 was constructed in 1943 to perform the water drying process to harden explosive powder grains. Operations ceased in the mid-1950s, and the building was used to house two Plymouth gas locomotives during the 1960s. Building 541 was demolished under TECUP in 1983.

During its use as a water drying process facility, Building 541 received shipments of explosive powder, transported by railroad from Building 533. PTA personnel reported that a vat in Building 541 ruptured, causing liquid containing propellant to leak onto the building floor and to the outside area. The solution was reported to be single-base propellant grains dissolved in solvents. The energetic compounds were nitrocellulose and/or nitroglycerine. The solvents were ether, alcohol, and/or acetone.

Phase II RI activities conducted at this site in 1996 included the installation of two monitoring wells, and the collection of soil and groundwater samples. SVOCs and 2,4-DNT were detected in the soil at concentrations greater than LOCs during the Phase II RI. Results of a HHRA found that the risks from exposure to surface soil at the site are equal to the target level of 1×10^{-4}. Risks and hazards from subsurface soil exposure are below the target levels. Additional RI sampling was conducted in 2001 to complete the delineation of the soil contamination.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS:
SVOCs, Explosive
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

In 2003, PICA-064, 073, 074, 140, 142, 146, 148, 149, 150 and 156 were listed as response complete in AEDB-R and will be addressed under PICA-085.

Part of PICA-085 = PICA-150, Site 150 Propellant Plant, Bldg 555

SITE DESCRIPTION

Building 555 was constructed in 1930 as a continuous drying house for explosive powder. Railroad tracks were used to transport the explosive powder to this facility. Building 555 was demolished under TECUP in 1999.

Wastewater, from explosive operations at Building 555, was formerly discharged to a lead-lined trough, which discharged to a sawdust filter, located on the western side of the building. Once the explosives were filtered from the waste stream, the water was discharged directly onto the ground. According to PTA personnel, nitrocellulose chunks and water from explosive operations at Building 555 were found in a pipeline, and an explosion occurred when the pipeline was cut.

Phase II RI activities conducted at this site included the installation of a monitoring well and the collection of soil and groundwater samples. Lead and explosives were detected at concentrations exceeding LOCs in surface soil collected alongside the lead-lined wastewater trough during the Phase II RI. Additional RI sampling was performed in 2001 to delineate the soil contamination, followed by preparation of a HHRA. The wooden filter box was removed in 2003 along with impacted soil.

In 2003, PICA-064, 073, 074, 140, 142, 146, 148, 149, 150 and 156 were listed as response complete in AEDB-R and will be addressed under PICA-085.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS:
Lead, Explosives
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Part of PICA-085 = PICA-156, Site 184 Refrig. & Inert Gas Plt, Bldg 523

SITE DESCRIPTION

Building 523 was constructed in 1938 for use as a refrigeration house. Freon was used in the refrigeration unit to cool brine (salt water), which was circulated to nearby buildings for use in maintaining ether at low temperatures, during the explosives manufacturing process. An inert gas manufacturing process was also located at Building 523. The process produced INGAS, a mixture of carbon dioxide and nitrogen.

Building 523 was deactivated on 1976 and most of the process equipment was removed. In 1991-1992, two USTs used to store gasoline were removed and the building decontaminated with a steam cleaner. Soil samples collected from the building, following the UST closure, contained elevated concentrations of TPHs and SVOCs. NJDEP notified PTA that the closure area will require further action. The building was demolished in 1998 under TECUP.

Phase II RI activities conducted at this site included the installation of two monitoring wells and the collection of soil and groundwater samples. No elevated chemical levels were detected in the soil or groundwater samples collected at the site during the Phase II RI. Results of the HHRA indicate that the risk and hazard from soil exposure at the site are below $1x\ 10^{-4}$ and 1, respectively.

In 2003, PICA-064, 073, 074, 140, 142, 146, 148, 149, 150 and 156 were listed as response complete in AEDB-R and will be addressed under PICA-085.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS OF CONCERN:
None
MEDIA OF CONCERN:
None
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

PICA-091, Site 55
Bldgs in 200-Area

SITE DESCRIPTION

This site consists of Building 221, an explosives inspection and machining facility; Building 223, a former explosives inspection and machining facility; and Building 225, an explosives machining and light assembly facility. From the 1940s to the 1970s, pilot-scale explosive unit machining and packout operations occurred at Building 221. Other activities conducted at the building include explosive unit testing, inspection, and storage. Materials used at Building 221 are limited to explosives, radioactive materials, and small amounts of solvents and propellants. Former Building 223 is believed to have performed similar operations. Specific operations conducted at Building 225 include solid explosives or propellant cutting, drilling, and pressing. Wastewater is conveyed by floor drains to a collection tank in Building 225. From the collection tank, the wastewater flows along a trough to a filter, finally discharging to Bear Swamp Brook.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
SVOCs, PCBs, Explosives, Arsenic
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
RI/FS, LTM

An internal investigation, undertaken in 1988, identified percent levels of explosives in surface soil along the wastewater conveyance trough and near the discharge point to Bear Swamp Brook. In 1991, a RCRA closure was performed on a 4,000 gallon AST located in a concrete vault in the basement of Building 225. Sludge and explosives-contaminated wastewater were removed from the tank and disposed of off-site. The concrete vault, tank and basement area were subsequently decontaminated. Soil samples collected, downgradient of the tank, contained VOCs and metals above LOCs. NJDEP reported that the subject area requires further action. In 1993, facility-wide testing of over 1,000 machines identified PCBs in a milling machine located in Building 225. The RI performed in 1996 involved the performance of a radiological survey, installation of monitoring wells, and collection of soil and groundwater samples. No soil samples collected during the radiological survey contained levels of radionuclides in excess of LOCs. Explosives were detected in the groundwater, downgradient of the buildings, at concentrations exceeding LOCs. SVOCs, PCBs and arsenic concentrations were identified above LOCs in the soil samples.

Additional RI sampling completed in 2000 helped to delineate the extent of the PCBs in soil and RDX in the groundwater. Results of the HHRA indicated that risk and hazard exposure to surface soil are above the target risk levels of 1E-4 and the target hazard level of 1.

In 2003, PICA-123, 124, 125, 126, 127, 128, 129, 130, 132 and 134 were listed as response complete in AEDB-R and will be addessed under PICA-091.

PROPOSED PLAN

A FS to include a PP and ROD will be completed. It is assumed that the combination of the existing vegetative cover and institutional controls will be the remedy for this site.

PICA-124, 125, 126, 127, 128,129, 130, 132, 134 are considered response complete.

Part of PICA-091 = PICA-123, Site 62
Former Haz Waste Storage/ Fuse Assembly, Bldg 210

SITE DESCRIPTION

Building 210, constructed in the 1940s, originally was used as a fuse-assembly line, where black powder was packed and formed into o-rings. Munition pack-out occurred here for several years in the early 1970s. Since then, all equipment, except for the fuse presses, has been removed. In the past, wastewater was discharged via a drain line to the ground outside Building 209. PTA personnel reported that this practice ceased when the building was connected to the sanitary sewer system around 1990. The building has been decontaminated and was used for hazardous waste storage between September 1986 and 1988. As a hazardous waste storage facility, Building 210 stored small quantities of various chemicals, waste oil, and asbestos. The building was also used to store investigation-derived waste generated from sampling activities. Building 210 is slated for demolition in 2003.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS:
SVOCs, Copper
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, IRA, RI
CURRENT IRP PHASE:
RC - 2003

According to PTA personnel, all wastes were removed from the building, and the building underwent a RCRA closure in 1991. The RCRA closure involved decontamination of each room that stored waste and removal of asbestos-containing material. In 1992, Building 210 received an official clean closure from NJDEP. A preliminary site evaluation including a radiation survey, was conducted by AEHA in 1993. Analysis of soil samples, as part of the survey, detected elevated levels of radium. Phase II RI activities performed in 1996 included a radiological survey, installation of monitoring wells, and collection of soil, sediment and groundwater samples. No soil samples collected during the radiological survey contained levels of radionuclides in excess of LOCs. Levels of PAHs and copper were identified above their respective LOCs in the surface soil. Results of a HHRA for soil exposure at the site indicated that the risks and hazard indices are below the target levels of 1×10^{-4} and 1, respectively.

No additional RI activities are planned for the site. Maintenance of existing engineering controls (vegetative cover) has been recommended to address soil contamination above LOCs.

In 2003, PICA-123, 124, 125, 126, 127, 128, 129, 130, 132 and 134 were listed as response complete in AEDB-R and will be addessed under PICA-091.

Part of PICA-091 = PICA-124, Site 64 Loading/ Disassembly Plant, Bldg 241

SITE DESCRIPTION

Building 241 was constructed in 1942 as a loading plant for explosive and propellant munitions. The building was later converted to be used for demilling and disassembly of explosive projectiles. In March 1981, the building was converted to a storehouse and was used as office space and an inert storage area. The building is currently used for storage of plumbing and building supplies. PTA file documentation indicates that wastewater discharges from the building were conveyed by floor drains, with traps to catch basins, and then into an intermittent stream, which discharges into Bear Swamp Brook.

As part of the RCRA closure of a storage shed associated with Building 241, stained and discolored soil were excavated and drummed for off-site disposal. Additional soil sampling and analysis indicated levels of petroleum hydrocarbons, which the NJDEP stated would require further action. The Phase II RI involved the installation of two monitoring wells and the collection of soil groundwater, surface water, and sediment samples. During the RI, PAH compounds and metals were detected at concentrations greater than their respective LOCs in the surface soil. In addition, TCE was reported in both monitoring wells above its LOC. A bioassay conducted on surface soil from the site did not indicate any toxicity to the earthworms.

In response to regulatory comments on the RI, additional soil and groundwater samples were collected to delineate the existing contamination. Results of a HHRA indicate the risks are within or below the target range. The hazards are below the target level. Modeled risk and results of a soil bioassay indicate minimal ecological risk to terrestial species. Groundwater contamination is being further investigated as part of the Mid-Valley investigation. Surface water and sediment contamination in adjacent Bear Swamp and Bear Swamp Brook was evaluated in the Green Pond Brook/Bear Swamp Brook FS.

In 2003, PICA-123, 124, 125, 126, 127, 128, 129, 130, 132 and 134 were listed as response complete in AEDB-R and will be addessed under PICA-091.

STATUS

RRSE RATING:
Medium Risk

CONTAMINANTS:
Metals, VOCs, SVOCs

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA/SI, RI

CURRENT IRP PHASE:
RC - 2003

Part of PICA-091 = PICA-125, Site 98
Mine Assembly Facility Bldg 268

SITE DESCRIPTION

Building 268 was constructed in 1941 as a loading, assembly, and pack-out facility. As a production facility, various types of munitions were produced at Building 268, including antipersonnel missiles. In 1969, the building was decontaminated in accordance with an arsenal-wide cleanup initiative and converted to a pilot-scale research and development facility. Building 268 was proposed for inactive reassignment in March 1975, and additional decontamination was performed. The building was later used to store inert materials (e.g., auxiliary equipment). The building was demolished in accordance with TECUP in the late 1990s.

A limited site investigation including soil sampling was conducted by ARDEC in 1990. Soil samples were analyzed for VOCs, SVOCs, and metals. Only SVOC concentrations exceeded LOCs. As part of the RI conducted in 1996, groundwater, soil and sediment samples were collected. PAHs and beryllium were detected in the surface soil at concentrations slightly in excess of LOCs. Results of a HHRA for soil exposure at the site indicated that the risks and hazard indices are below 1×10^{-4} and 1, respectively. There is little potential risk to mammalian and avian species based on foodchain modeling. SVOC and metals contamination detected in sediment samples has been addressed as part of the Green Pond Brook/Bear Swamp Brook FS.

NJDEP and EPA have not requested any additional sampling, and no additional RI activities are planned for the site. An FS has been recommended to address soil contamination above LOCs.

In 2003, PICA-123, 124, 125, 126, 127, 128, 129, 130, 132 and 134 were listed as response complete in AEDB-R and will be addessed under PICA-091.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS:
SVOCs, Metals
MEDIA OF CONCERN:
Sediment
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Paty of PICA-091 = PICA-126, Site 100
Exp Loading Facility, Bldg 276

SITE DESCRIPTION

Building 276 was constructed in 1902 and was used as a powder storage magazine from 1902 until 1922. Around 1922, the building was converted to a shell-loading plant. Building 276 was one of the major facilities used in the production of explosives during World Wars I and II. The building was decontaminated and demolished in accordance with TECUP in the late 1980s. The location of former Building 276 is currently used as a staging area for soil piles from sanitary sewer excavations, and for metal plates used in ammunition testing. Unauthorized dumping of waste material has occurred in and around the location of former Building 276. Materials dumped here included storage tanks, test chambers, and rocket components. In addition, explosives contaminated soil excavated from the area in and around the wooden wastewater conveyance trough system at Building 225 is documented to have been temporarily stored here.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS:
PCBs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC -2003

As part of an internal investigation conducted in 1986, soil samples collected around a transformer pad, located south of the former building, contained elevated levels of PCBs. Phase II RI activities completed in 1996 included performance of a geophysical survey, installation of two monitoring wells, excavation of test pits, and collection of soil, groundwater and sediment samples. The geophysical survey identified several anomalous areas. Test pits excavated into the anomalies contained various pieces of metallic construction debris. During the RI, PAH concentrations, in excess of LOCs, were detected around the transformer pad. In addition, PCBs were identified in excess of LOCs in a soil waste pile staged at the site.

Additional RI work was performed in 2000 to delineate the PCB and PAH contamination in the soil. Additional LOC exceedances were reported for PCBs and PAHs. Results of a HHRA indicate that the risk from surface soil exposure is above the target level of 1E-4. The risk from exposure to subsurface soil is below 1E-6. The hazards from both exposure scenarios are below the target threshold of 1. SVOC and metals contamination detected in sediment samples collected during the RI has been addressed as part of the Green Pond Brook/Bear Swamp Brook FS.

In 2003, PICA-123, 124, 125, 126, 127, 128, 129, 130, 132 and 134 were listed as response complete in AEDB-R and will be addessed under PICA-091.

Part of PICA-091 = PICA-127, Site 127 Melt Casting Operation, Bldg 230

SITE DESCRIPTION

Building 230 was constructed in 1918 as a melt and pour facility. Operations at Building 230 involved melting explosives in steel tilt kettles and pouring the molten liquid into shells, mortar, and molds. Currently, the building is still active. According to the PTA transformer database, one of the transformers at the site contained Aroclor-1260 at a concentration of 77 ppm.

In September 1991, a mercury-filled manometer in Building 230-G ruptured, resulting in extensive soil contamination in and around Building 230. Seven roll-off containers of contaminated soil were removed from the site. Phase II RI activities included the installation of one monitoring well and collection of soil and groundwater samples. Samples, collected around the remediated area during the RI in 1996, detected arsenic in the surface soil and PAHs in the subsurface soil at concentrations above LOCs, but no mercury exceedances.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Additional RI sampling was conducted in 2000, in response to regulatory comments. As a result, the extent of soil contamination has been delineated, and no further investigation is planned. Results of a HHRA for soil exposure at the site indicated that the risks and hazard indices are below the target levels of $1x\ 10^{-4}$ and 1, respectively. A bioassay conducted with soil from the mercury spill area did not indicate toxicity to the earthworms. An FS has been recommended to address soil contamination above LOCs.

In 2003, PICA-123, 124, 125, 126, 127, 128, 129, 130, 132 and 134 were listed as response complete in AEDB-R and will be addessed under PICA-091.

Part of PICA-091 = PICA-128, Site 128 Exp Pressing Plt, Bldgs 235,236

SITE DESCRIPTION

This 2.4-acre site consists of Building 235, an explosives production facility, and Building 236, an explosives pressing facility. A gamma ray densitometer, which contained cobalt pellets, was used at Building 235 to measure unit density. The cobalt was in a shielded or contained source. The densitometer was removed from the building in 1974, and no associated contamination was reported. However, radiation surveys, conducted at the building, indicated readings from 0.10 milliroentgens per hour to greater than 100 milliroentgens per hour. Wastewater from explosive production operations at Building 235 were discharged via a trough to a 90-gallon stainless-steel baffled safety box located on the south side of the building. The safety box, discharged to a small tributary, which flows into Bear Swamp Brook. Building 235 has been inactive since the mid-1970s.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
Metals, SVOCs
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Building 236 was constructed in 1959 as an explosives pressing facility. The building was decontaminated in 1969 for its present use as an explosives pressing facility for pilot-scale research and development efforts. Wastewater from operations at Building 236 are currently drummed and manifested for offsite disposal, but was historically discharged directly to Bear Swamp Brook.

Phase II RI activities included performance of a radiological survey, installation of four monitoring wells, and collection of soil and groundwater samples. The radiological survey performed around Building 235 identified several locations with gross alpha activity in excess of the project-specific administrative limit. Analytical results from the RI detected lead in groundwater at an upgradient background monitoring well, and SVOCs and arsenic in soil at concentrations in excess of LOCs.

Additional RI work was completed in 2000 as a result of regulatory comments. Groundwater samples collected by the low-flow sampling method did not contain elevated lead levels. Delineation of the arsenic contamination has been completed, and no further investigation is proposed. Results of a HHRA for soil exposure at the site indicated that the risks and hazard indices are below the target levels of 1×10^{-4} and 1, respectively. An FS has been recommended to address soil contamination above LOCs.

In 2003, PICA-123, 124, 125, 126, 127, 128, 129, 130, 132 and 134 were listed as response complete in AEDB-R and will be addessed under PICA-091.

Part of PICA-091 = PICA-129, Site 129 Change House, Bldg 240

SITE DESCRIPTION

Building 240 was constructed in 1942 as a change house. In 1972, it was converted to its current use as an administrative office. Change house equipment included laundry, lavatory, and shower facilities, which probably supported operations in Building 241 (demilling and explosives disassembly), as well as other nearby production buildings. Because personnel working in the production facilities used the change house, wastewater from washing operations may have been contaminated with explosives and, to a lesser degree, cleaning solvents such as acetone. Water was discharged to a drain and ultimately to Bear Swamp Brook.

Phase II RI activities completed in 1996 include the installation of one monitoring well and the collection of soil and groundwater samples. A marginal exceedance of an individual PAH LOC was reported by the on-site laboratory in one surface soil sample collected during the RI. Results of a HHRA for soil exposure at the site indicated that the risks and hazard indices are below the target levels of 1×10^{-4} and 1, respectively.

NJDEP and EPA have not requested any additional sampling, and no additional RI activities are planned for the site. An FS has been recommended to address soil contamination above LOCs.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS:
SVOCs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

In 2003, PICA-123, 124, 125, 126, 127, 128, 129, 130, 132 and 134 were listed as response complete in AEDB-R and will be addessed under PICA-091.

Part of PICA-091 = PICA-130, Site 130 Powder Press/ Pelleting, Bldg 252

SITE DESCRIPTION

Building 252 was constructed in 1918 as an explosives pressing facility, and had been used until recently for this purpose. Wastes generated at the building included scrap explosives, waste solvents and wastewater. The building was recently renovated, but is currently inactive. According to the PTA transformer database, three transformers, located on the eastern side of the building, leaked; however, none of the transformers were contaminated with PCBs. Building 252 contains an UST, which was connected to a wet vacuum system that collected particulates from the work station area. The UST was closed in place approximately 5 years ago. As part of closure activities, the tank was cleaned and then filled with gravel.

Several internal investigations have been conducted in and around the building, including an environmental assessment in 1994. It is reported that these studies concluded that the building area was not contaminated. Phase II RI activities completed in 1996 included the installation of three monitoring wells, and the collection of soil and groundwater samples. Marginal exceedances of LOCs were detected for PCE and arsenic in the groundwater and soil, respectively. Results of a HHRA for soil exposure at the site indicated that the risks and hazard indices are below the respective target levels of 1×10^{-4} and 1.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
Arsenic
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Additional RI activities were completed in 2000 to investigate the PCE identified in groundwater. A groundwater sample collected by the low-flow sampling method did not contain any VOCs in excess of LOCs. An FS has been recommended to address soil contamination above LOCs.

In 2003, PICA-123, 124, 125, 126, 127, 128, 129, 130, 132 and 134 were listed as response complete in AEDB-R and will be addessed under PICA-091.

Part of PICA-091 = PICA-131, Site 131 Bldg 266, Former Ordinance Manufac

SITE DESCRIPTION

Building 266 served as an explosives production facility from the time of its construction in 1903 until the early 1950s. Explosives production ceased here sometime before 1953, when the building was converted to its current use as a wind tunnel research facility. The wind tunnel research facility has been used to simulate and study the flight characteristics of small projectiles. At one time, operation of the wind tunnel resulted in the generation and dispersion of mercury condensate in and around the wind tunnel exhaust area.

An internal investigation conducted in 1991 included the collection of 23 soil samples around Building 206. In general, the results showed elevated levels of PAHs and metals. In response to an accidental mercury release in February 1992, two soil samples were collected from areas that had been excavated following the release. Results of the post-excavation samples did not detect mercury concentrations above the LOC. Phase II RI activities conducted in 1996 included the installation of three monitoring wells and the collection of soil and groundwater samples. Analytical results from the RI identified VOCs in groundwater, and SVOCs and arsenic in the soil at concentrations above LOCs.

Additional RI activities performed in 2000 included the collection of soil and groundwater samples at the site. Additional LOC exceedances were reported for TCE in groundwater and arsenic in the soil. Results of the HHRA indicate the risk and hazard from exposure to surface soil are the target risk level of 1E-4 and the target hazard level of 1. Modeled risk and results of a soil bioassay indicate minimal ecological risk to terrestial species. Further investigation of groundwater concentrations will be conducted as part of the Mid-Valley investigation. Feasibility studies are recommended to address the soil contamination and area-wide groundwater contamination.

In 2003, PICA-123, 124, 125, 126, 127, 128, 129, 130, 132 and 134 were listed as response complete in AEDB-R and will be addessed under PICA-091.

STATUS

RRSE RATING:
Medium Risk

CONTAMINANTS:
VOCs, SVOCs, Metals

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA/SI, RI

CURRENT IRP PHASE:
RC - 2003

Part of PICA-091 = PICA-132, Site 132
Bldgs 271, 271 I-N Former Load Facility

SITE DESCRIPTION

This site included seven buildings: Building 271, an explosives press loading facility, and Buildings 271-I through 271-N, lead azide primer, dry house, and general ordnance facilities. Operations at Building 271 involved the use of pneumatic presses to press explosive primers into loading cups. A portion of Building 271 was also used as a magazine for in-processing munitions. Building 271-I was used as a lead azide primer building, supporting explosives production operations at Building 271. Building 271-J was used as a dry house for delay and pyrotechnic compositions, in support of explosives production operations at Building 271. Building 271-K was used as a heater house. Building 271-L was used as a dry house for lead azide primers used in explosives manufacturing at Building 271. Building 271-M was used as a dry house for the processing of initiating powders. Building 271-N was used for drying lead styphenate. Explosives contaminated wastewater from floor washdown activities, if any, was likely discharged directly onto the ground outside the doors since the accessory buildings did not have a wastewater conveyance system.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
Metals, Explosives
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
LTM
FUTURE IRP PHASE:
FS, LTM

The Phase II RI conducted in 1996 included the installation of two monitoring wells and the collection of soil, groundwater and sediment samples. The RI identified concentrations of RDX and metals in the groundwater, in excess of LOCs as well as concentrations of metals in soil above LOCs. Following the RI, the buildings at the site were demolished, and the site regraded under TECUP. As a result, NJDEP requested additional sampling to re-characterize the surface soil at the site.

In 2000, ten surface soil samples and six groundwater samples were collected as part of additional RI activities. Elevated levels of metals were detected in the soil. RDX and manganese continue to be present in the groundwater samples at concentrations above LOCs. Results of a HHRA indicate risks and hazards from soil exposure are below the target levels of 1E-4 and 1, respectively. There is little potential risk to mammalian and avian species based on foodchain analysis.

In 2003, PICA-123, 124, 125, 126, 127, 128, 129, 130, 132 and 134 were listed as response complete in AEDB-R and will be addessed under PICA-091.

PICA-093, Site 180
Waste Burial Area Near Sites 19 & 34

SITE DESCRIPTION

The waste burial area is situated in a low marshy area formerly containing several debris piles of drums, concrete rubble, scrap, metal, lumber, railroad ties, and trees. A drainage ditch discharges to the southeast corner of the site, causing localized ponding and marshy conditions. Extensive landfilling operations have taken place in this portion of Area C over the years. Materials were disposed of in large burial pits and in surface piles. The proximity of Site 180 to the burning ground made it a convenient location to dispose of/store items that could not be burned or did not require burning. Since this was an unregulated disposal site, the years of operation are unknown. It is believed that most disposal activities took place in the 1960s and 1970s.

The site was the subject of a remedial investigation in 1994. As part of the remedial investigation a geophysical survey was conducted, surface, subsurface soil, surface water, sediment, and groundwater samples were collected. All samples were analyzed for VOCs, SVOCs, metals, explosives, PCBs, dioxins/furans, and gross alpha, gross beta, and gamma radiation. The geophysical survey did not identify any burial areas. Other results indicated that levels of concern were exceeded for BNAs in soil and sediment, metals in surface water and sediment and metals and dioxin in groundwater. The HHRA determined that cancer risk was in the range of $1x10^{-4}$ to $1x10^{-6}$. As part of an extensive trenching investigation in 1998, additional soil, sediment, and surface water samples were collected and analyzed for VOCs, SVOCs, metals, pesticides, explosives, dioxins/furans and PCBs. During this investigation, SVOCs, metals and PCBs were occasionally detected in surface soil above the LOC and carbon tetrachloride was detected above the level of concern in one subsurface soil sample. The trenching investigation also removed some debris piles and asbestos found at the site and restored native vegetation to the area. During trenching investigation, live 90-mm grenades were discovered buried at the site. The site was also the subject of a risk management evaluation that recommended a feasibility study for mitigation of human health risk and no action for ecological concerns. HHRA found risk within the $1x10^{-4}$ to $1x10^{-6}$ risk range and noncancer HI below one. Impacts to groundwater will be covered under an area-wide action addressed in PICA 206. A draft FS will be submitted in Nov 2003. The FS recommends institutional controls and limiting site access to 5 days per year. A portion of the contamination at this site will be covered by the cap to be installed over the Burning Ground.

Groundwater is addressed under Area C.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
PAHs, PCBs, Potential UXO
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS (funded)
FUTURE IRP PHASE:
LTM

PROPOSED PLAN

The area of concern will be marked with signs.

PICA-094, Site 69
Surveillance Laboratory (Bldg 92)

SITE DESCRIPTION

Building 92 was constructed in 1969 as a Predictive Surveillance Laboratory. Building 92 also houses the Stockpile Reliability Testing (SRT) area, a controlled clean room where optical disks are cleaned and checked for quality. From 1969 to 1982, the primary wastes generated at the Predictive Surveillance Laboratory included nitric and hydrochloric acids. Sodium cyanide, potassium cyanide, chromium trioxide, acetone, and peroxide were also generated and all wastes were reportedly discharged to a concrete UST on the northwest side of the building via floor drains and sinks. According to PTA personnel, the UST discharged into Bear Swamp Brook through the outfall near Building 95, the Plating and Etching Wastewater Treatment Facility (ANL, 1991). A review of Arsenal environmental files revealed that fuel oil was discovered in the spent acid waste UST in 1989. Pads were used to absorb the oil. No information was provided in the spill report to indicate the origin of the oil. The UST was disconnected in 1989 and removed in 1992.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS:
Metals, Petroleum
MEDIA OF CONCERN:
Groundwater, Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
RC

Due to RCRA activity in the early 1990s, no investigation was performed as part of the Phase I RI. However, two RCRA closures have been completed. The first action consisted of decontamination of three areas inside the building and one area outside the building. Rinseate and wipe samples were collected from the decontaminated areas. This RCRA action (decontamination of four areas) is considered to be completed by NJDEP. The second RCRA action was the removal and decontamination of the UST. The NJDEP required additional investigation/ action at the UST. To fulfill this requirement, CHPPM conducted a relative risk evaluation at the site consisting of a radiological survey, groundwater and soil sample collection, and an assessment of relative risk. The report gave the site a low potential site risk rating and selected groundwater as the only medium of concern. A risk management evaluation of the site was completed in 2000 where a screening risk evaluation determined that it was likely that the cancer risk was below $1x10^{-6}$ and HI less than one. This risk management evaluation recommended no further action.

The groundwater is covered in the Area D area wide groundwater feasibility study (PICA-076).

PROPOSED PLAN

A request for closure will be submitted to the regulators.

PICA-096, Site 117
Bldg 22, Precision Machine Shop

SITE DESCRIPTION

Building 22 is a one-story, 4,220 ft^2 structure, which was constructed in 1918 as a precision machine shop. Over the years, various activities conducted at Bldg 22 included machining of DU and machining of other metals (e.g., aluminum and copper) to manufacture appurtenances for antitank weapons, rocket launchers, and explosive antitank shells. Precision machining activities were conducted at Bldg 22 until 1986. Since 1986, Bldg 22 has not housed any manufacturing operation or been used for any other purpose. Reportedly, Bldg 22 was cleaned after precision-machining activities had ceased.

STATUS

RRSE RATING: Medium Risk

CONTAMINANTS:
VOCs, BNAs, PCBs, Pesticides, Radiologicals, Metals

MEDIA OF CONCERN:
Soil, Sediment

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RI/FS

FUTURE IRP PHASE:
LTM

The site underwent a RI in 1994 that included a radiological survey and the collection of surface soil samples for VOCs, SVOCs, metals/cyanide, explosives, pesticide/PCBs, uranium and gross alpha, beta and gamma radiation. A human health and ecological risk assessment were performed. The only exceedances were for beryllium in surface soil. The radiological survey did not identify any areas of concern. In 2000, a risk management plan was written to evaluate human health and ecological risk and determine the best path forward. Human health risk assessment determine that risk for three modeled receptor populations was between $1x10^{-4}$ and $1x10^{-6}$. Hazard indices were below one for two populations and exactly one for the third population. Ecological risk assessment work included terrestrial receptor modeling, earthwork studies, plan studies, mammal trapping, mammal community assessments, and tissue analyses. The conclusion was that although the site currently has low habitat value, the site could pose risks that are sufficiently elevated to warrant risk management attention if impacted portions are allowed to return to more attractive habitat. The risk management evaluation determined that it was not in the best interest of the site to actively remediate the site for ecological concerns, however the site should proceed to FS for human health concerns.

Potential groundwater contamination associated with the site is being addressed under PICA-076.

PROPOSED PLAN

A focused FS, PP and ROD will be completed. Institutional controls will be implemented as appropiate.

PICA-097, Site 118 Bldg 41, Pesticide Storage & Former Oil/ Water Separator

SITE DESCRIPTION

Bldg. 41 is located in the middle of the Golf Course. Prior to 1964, Building 41 was used for storage. In 1964, this building was reassigned for storage of fertilizer, lime and miscellaneous inert materials. Since then, the building has been predominantly used for storage of pesticides and herbicides that are applied on the golf course and lawn surrounding the site. Until 1988, it was a common occurrence for open bags of pesticides and herbicides, stored at Building 41, to leak onto the wooden floor due to a leaky roof.

Groundwater samples collected from site monitoring wells have consistently contained elevated levels of TCE and PCE. During the Phase I RI, metals were detected at concentrations in excess of their respective LOCs in surface soil samples. Sediment samples from the oil/water separator pond contained elevated levels of metals, cyanide, DDT, and PCBs. The Phase I ERA concluded that this site poses virtually no risk because the contaminant levels are too low, and the area is spatially insignificant. However, earthworm toxicity testing did indicate total mortality in one sample, probably due to pesticides. Human health risk falls within the target range (1×10^{-4} to 1×10^{-6}). The hazard index exceeds the target level of 1, primarily due to manganese and thallium. Additional RI sampling conducted in 2000 delineated the extent of most metals in the soil, but the delineation for arsenic, which is believed to be related to pesticide use on the golf course, is not ER,A fundable.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
Metals, TCE, DDT, PCB
MEDIA OF CONCERN:
Soil, Sediment
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
LTM

PROPOSED PLAN

A PP and ROD will be completed. Maintenance of existing engineering controls will be recommended as the remedy for this site.

Groundwater contamination is being addressed on an area-wide basis (Area D).

PICA-098, Site 123
Metal Plating Shop, Bldg 64

SITE DESCRIPTION

Over the years, Building 64 has housed various divisions of PTA including the ordnance facility that conducted metal plating operations. Available documents indicate that Bldg 64 may have also been used as: an ordnance shipping building, a cutting oils storage area, a nuclear materials operations building and a mechanical shop for performing drilling, metal cutting operations and encapsulation and decapsulation of electronic and mechanical components. Currently, Bldg 64 is used as an administrative building occupied by PTA's managed by CCAC division, which houses the Light Armament Division, Light Weapons Branch, and Future Weapons Branch.

Reportedly, Bldg 64 was also used for handling materials containing beryllium and depleted uranium. Radioactive material storage occurred until at least 1968. When Bldg 64 was used as a metal plating shop, flow in Bear Swamp Brook (BSB) reportedly was green and brownish red. Additionally, available documents indicate that the neutralization system located outside the building leaked. These reports suggest that release of wastewater into BSB occurred during this period.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS:
Metals, PAH
MEDIA OF CONCERN:
Soil, Sediment, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
LTM

During the Phase I RI, no LOC exceedances were reported in the soil samples. PAHs and metals were detected above their respective LOCs in the sediment samples. In addition, a radiological survey did not identify any areas of concern at the site. Human health risk falls within the target range (1×10^{-4} to 1×10^{-6}). The hazard index does not exceed the target level of 1. The Phase I ERA concluded that this site poses virtually no risk because the contaminant levels are too low, and the area is spatially insignificant. In response to regulatory comments, additional RI sampling was conducted in 2000 to characterize potential sources at the site. Results of a soil gas survey and soil samples did not identify any potential sources.

As part of the remediation of adjacent Site 122 (PICA-011), a 40-ft portion of BSB bordering this site was excavated in early 2000. The excavated sediment was disposed off site. In 2001, additional excavation was performed at Site 123, parallel to the BSB shoreline, to investigate an oily layer identified during the Site 122 remediation. No evidence of oil was observed, such as staining or petroleum odor, however, PCBs were detected above the LOC in the soil sample collected immediately adjacent to BSB. Since the PCBs are probably associated with other contaminants identified in BSB, no further sampling is proposed at Site 123, and environmental monitoring is proposed for this portion of BSB.

PROPOSED PLAN

A FS to include a PP and ROD will be completed.

PICA-102, Site 61
Former Waste Dump/Chemical Lab

SITE DESCRIPTION

Site 61 encompasses ~3 acres and consists of Buildings 171 and 176. Trash, including cars and unknown materials, were reportedly used to fill in the swamp area west of Bldgs 171 and 176 sometime prior to 1960. Bldg 171 was constructed in 1948 on what was originally the site of High Explosives Magazine #2. Since its construction, Bldg 171 has been used as an administrative building containing a graphics department, which included photo processing units. A RCRA closure plan was prepared for the photographic processing. The facility was to have been closed. However, the closure plan was never implemented because the building was renovated. NJDEP considers the renovation work to have completed closure of Bldg 171. Bldg 176 was constructed in 1944 for storage of laboratory equipment and sampling of ammunition. In 1959, Bldg 176 was converted to a Plastics Information Center and later converted to an administrative building.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS: Metals, VOCs, SVOCs, PCBs, Pesticides
MEDIA OF CONCERN:
Soil, Sediment, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
RD, RA, LTM

The site underwent a remedial investigation in 1994 consisting of a geophysical survey, test pits, radiological survey, surface soil, surface water, sediment sampling for VOCs, BNAs, metals, cyanide, explosives, and pesticide/PCBs. BNAs and metals were detected above LOC in surface soil and sediment. The Phase I RI recommended that this site proceed to FS. However, additional RI work was completed in 1997 based upon regulatory comment. This RI consisted of test pits, the collection of subsurface soil, surface soil, surface water and sediment for VOCs, SVOCs, pesticide/PCBs, and metals. The risk management plan in 2000 determined that human health risk was within the $1x10^{-4}$ to $1x10^{-6}$ range for all three receptor populations. Two of three hazard indices were greater than one. Elevated hazard indices were largely caused by inhalation of manganese. An ecological risk assessment was performed, including terrestrial receptor modeling, earthworm bioassays, plan/mammal community assessments, and tissue sample analyses. The risk management decision was that the overall weight of evidence indicated that current conditions potentially posed ecological risk. The recommendation was for risk management attention or monitoring to be decided in a FS. The FS will be submitted to regulators in eary 2004. The feasibility study will evaluate institutional controls in addition to other remedies.

Metals contaminated sediment was found between PICA-102 (Site 61) and PICA-103 (Site 104). Therefore, to address all contamination at PICA 102, 103 and within the stream between the two sites, an FS is being written to address all of the contamination. The FS will include all media at these sites withthe exception of groundwater. Groundwater is being addressed under PICA-204.

In 2003, PICA-103 was listed as response completed in AEDB-R and will be addressed under PICA-102.

PROPOSED PLAN

A FS, PP and ROD will be completed. Contaminated soil will likely be removed from both PICA 102 and 103. Institutional controls are expected to follow.

Part of PICA-102 = PICA-103, Site 104
Bldg 161 & 162 Chemical Lab

SITE DESCRIPTION

Site 104 occupies an area of ~1 acre and includes former Building 161 and Building 162. Bldg 161 was originally a railroad scale house built prior to 1942. A new Bldg 161 was constructed near the golf course for use as a pesticide storehouse. Bldg 162 is a three-story building constructed in 1942 as a physics/chemistry laboratory. Bldg 162 is currently the Applied Instrument Bldg whose primary operations include propellant and ammunition analyses. Past activities included chemical disposal in sewers and sinks, washing benches with carbon tetrachloride, using large quantities of mercury, and using solvent recovery cans. In the 1950s and 1960s, a lime pit for acid neutralization was located west of the building. This pit is no longer present. A catch basin, most likely draining to Green Pond Brook, is located on the southwest side of Bldg 162. Reportedly, propellants and chemicals were dumped in the swampy area, west of the building. In 1976, the pipes and sewers in and around Bldg 162 were removed and replaced in an attempt to control discharges.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS:
Metals, VOCs, PCBs
MEDIA OF CONCERN:
Soil, Sediment, Surface Water
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

A RI was completed for the site in 1994. Metals were detected above LOC in surface soil. BNAs and metals were detected above LOC in sediment and VOCs were detected above LOC in groundwater. The HHRA indicated that carcinogenic risk was between $1x10^{-4}$ & $1x10^{-6}$, mainly from beryllium and PCBs. HIs were above 1 due to barium, mercury, and manganese. The ecological risk assessment indicated that terrestrial species were at risk from metals, and there was impact to plants. Follow-up investigation was conducted in 1997. Metals were detected in surface soil and sediment above LOC. VOCs and metals were detected above groundwater LOCs, and PCBs and metals were detected above surface water LOCs. Additional sampling of surface soil and sediment was conducted in 2000 to delineate metals contamination. Based on the results of this investigation, no further sampling is proposed.

A FS is underway. The proposed remedy will be hot-spot removal and SW/SD long term monitoring.

Potential groundwater contamination associated with the site is being addressed under the Mid-Valley operable unit.

In 2003, PICA-103 was listed as response completed in AEDB-R and will be addressed under PICA-102.

PICA-108, Site 139
Bldgs in 400/300 Area

SITE DESCRIPTION

This site consists of Building 424 and the surrounding area. Bldg 424 was constructed in 1903 as a high explosives plant. As a high explosives plant, operations at Bldg 424 involved the use of a nitrocellulose-based slurry. After production of explosives ceased, all production equipment was removed, except for the neutralization and acid tanks. The building was then used as a grains-dimensioning laboratory and as a storage facility. Recently, Bldg 424 was used for nitration and testing of combustible cartridge cases. The building is currently inactive.

According to a 1964 DEH engineering drawing (DP-141463), a sump was located inside Building 424 and was used for the collection of overflow production water. The sump discharged to the marsh area southwest of the building via an open trough and a small outfall ditch. The ditch, located to the south of Building 423, is associated with the open trench portion of the Guncotton Line, which received liquid waste containing nitrocellulose, referred to as guncotton.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS: VOCs, PAHs, PCBs, Explosives, Metals
MEDIA OF CONCERN: Soil, Sediment, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS, LTM
FUTURE IRP PHASE:
LTM

Soil samples collected during the Phase I RI detected concentrations of PAHs, metals and PCBs in excess of LOCs. Surface water samples collected from the marsh detected LOC exceedances for metals. Corresponding sediment samples contained elevated levels of PAHs and metals. The VOC, methylene chloride and several metals were detected at concentrations in excess of LOCs in the groundwater samples. Human health risk falls within the target range (1×10^{-4} to 1×10^{-6}). The hazard index exceeds the target level of 1. Results of the adult lead model indicated lead is a potential health risk in the soil. The Phase I ERA concluded that this site poses a high risk to certain avian species and terrestrial invertebrates.

During the Phase II RI, sediment samples from the drainage ditch contained elevated levels of several explosive compounds and metals. In order to delineate the existing contamination, and investigate other potential sources at the site, additional samples were collected in 2000 and 2001. Based on the results of these samples, and a recommendation from NJDEP, one monitoring well was installed to determine the impact of lead contamination in the soil on groundwater quality at the site. Lead was not detected in the groundwater sample.

In 2003, PICA-104, 107, 109, 138, 147 and 210 were listed as response complete in AEDB-R and will be addressed under PICA-108.

PROPOSED PLAN

The tanks and lead contaminated soil will be removed (funded in FY04).

A FS to include a PP and ROD will be completed. Institutional controls will be recommended as the remedy for this site.

Groundwater contamination will be addressed on an area-wide basis.

PICA-104, 107, 109, 138, 147 and 210 are considered response complete.

Part of PICA-108 = PICA-104, Site 111
Bldg 454 & 455, Propellant Bag Flg Area

SITE DESCRIPTION

This site includes Buildings 454 and 455 and encompasses an area of ~3 acres (former railroad track area). Bldg 454 was used to fill bags with black powder. The bags were manufactured in Bldg 455. Bldg 454 is currently used for storage of books and files, while Bldg 455 is used as an office building.

Analytical results of surface soil samples, collected at this site during the Phase I RI, indicated PAHs and metals were detected in some samples at concentrations above LOCs. Human health risk falls within the target range (1×10^{-4} to 1×10^{-6}). The hazard index does not exceed the target level of 1. In order to delineate the extent of PAH contamination in the soil, additional samples were collected in 2000 and 2001. Nine out of the ten samples contained PAH compounds in excess of LOCs. Since the PAHs are associated with old railroad tracks at the site, no additional sampling will be conducted to complete the delineation.

In 2003, PICA-104, 107, 109, 138, 147 and 210 were listed as response complete in AEDB-R and will be addressed under PICA-108.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS:
PAHs, Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Part of PICA-108 = PICA-107, Site 138
BLDGs 404, 407, 408 Chemical Lab & Prop Plants

SITE DESCRIPTION

This site has an area of ~7 acres and includes Bldgs 404, 407 and 408. Bldg 404 was originally constructed as a storehouse for sodium nitrate. The bldg was modified in the 1950s for use as a scientific lab. The lab was used for conducting physical research, including bomb testing and pyrometry. A physical-chemical laboratory was located in Bldg 404 from 1958 to 1975. Currently, Bldg 404 is used as a machine shop and for test burning propellants. Bldg 407 was originally used as an experimental chemistry lab, and was subsequently used as an energetics lab for propellant manufacturing. Bldg 407 is currently used for electronic testing. Bldg 408 was originally used for the experimental loading and nitrating of cottons, linens, and wood pulp for the production of NC. Bldg 408 was modified for use as a chemical research facility in the experimental pressing of explosives. In 1974, the bldg was used as a lead azide production facility. Currently, Bldg 408 is used for chemical storage.

Well 410, an active drinking water supply well, located near Bldg 407, has contained elevated levels of VOCs and explosives. An investigation to determine the potential source of the contamination concluded that the most likely source of the VOCs was the former machine shop located near Bldg 407.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
VOCs, PAHs, Dieldrin
MEDIA OF CONCERN:
Soil, Sediment, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Environmental samples collected during the Phase I RI indicated surface soil exceedances for PAHs, metals, and pesticide, dieldrin. Surface water exceedances detected in samples from the drainage ditches include several metals. Associated sediment samples contained exceedances for PAHs, metals, and cyanide. Groundwater exceedances in the overburden aquifers include TCE and metals. Human health risk falls within the target range (1×10^{-4} to 1×10^{-6}). The hazard index exceeds the target level of 1. The Phase I ERA concluded that this site poses a high risk to certain organisms such as birds and terrestrial invertebrates. In order to delineate the extent of soil and sediment contamination, additional samples were collected in 2000 and 2001. Based on the results of these samples, the extent of contamination is widespread. The probable source of the PAH and metals contamination is believed to be the fill material used in this area.

In 2003, PICA-104, 107, 109, 138, 147 and 210 were listed as RC in AEDB-R and will be addressed under PICA-108.

Part of PICA-108 = PICA-109, Site 140, Bldg 427 & 427B, Propellant Processing

SITE DESCRIPTION

Site 140 consists of Buildings 427 and 427-B, and has an area of about 1.3 acres. Bldg 427 is a one-story structure with a total area of 6,285 ft^2. Bldg 427 was constructed in 1938 as a manufacturing plant for propellants. Propellant manufacturing at Bldg 427 involved the blending of energetic materials (e.g., nitrocellulose (NC), nitroguanidine (NG), 1,3,5,7-tetranitro-1,3,5,7-tetrazacycloctane [HMX], hexahydro-1,3,5-trinitro-sym-triazine [RDX]) with solvents (e.g., acetone, ether) in order to decrease their sensitivity. Explosives contaminated washdown water was stored in two catch tanks. According to PTA personnel, the catch tanks have been used since 1981. Prior to 1981, the wash down water was likely discharged directly to the ground surface. Bldg 427-B was constructed in 1939 as a dry house. Bldg 427-B has a storage space and three rooms where RDX, HMX, and other types of smokeless powders were dried prior to being processed into propellants in Bldg 427.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS:
SVOCs, Pesticides, Metals, PCBs
MEDIA OF CONCERN:
Sediment
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Site 140 underwent a remedial investigation in 1994. There were exceedances of metals, pesticides, PCBs, and BNAs in sediment. The HHRA indicated that carcinogenic risk falls between the $1x10^{-4}$ and $1x10^{-6}$ range. Hazard indices were all below one. In the Phase I RI, an ecological risk assessment was not performed at this site because neighboring sites had more representative habitat. In 2000, a risk management plan was written for this site. The plan compared Site 140 data to the neighboring site ERA and determined that there was ecological concern for avian receptors. The recommendation of the risk management plan was to proceed to FS to address human health and ecological concerns. As part of the suimp investigation, two sumps are scheduled to be removed in late 2003.

A PP and ROD will be completed. Sumps and limited surrounding soil removal is planned (funded in FY02).

In 2003, PICA-104, 107, 109, 138, 147 and 210 were listed as response complete in AEDB-R and will be addressed under PICA-108.

Part of PICA-108 = PICA-138, Site 90 Electromag Gun Test Shed Bldg 329

SITE DESCRIPTION

Building 329 was constructed in 1903 as a storage magazine, but was utilized in the production of explosives during World War I and World War II. Currently, Building 329 is used as an electromagnetic gun test range. According to the PTA transformer database, the three 50-KVA transformers, located on the eastern side of Building 329, have Aroclor-1260 concentrations of 183, 324, and 376 ppm. In 1963, there was a production-related explosion at Building 329. The explosion appeared to have no environmental impact. There were also several small spills of oil in Building 329 between 1988 and 1989. According to PTA personnel, any contaminated soils were removed.

In 1991, a RCRA closure was performed on two detached sheds that were used to store solvents. According to NJDEP correspondence, no further action is required for the closure area. Phase II RI activities included the installation of one monitoring well and the collection of soil, groundwater and sediment samples. Several metals were identified at concentrations exceeding LOCs in the surface soil, on the eastern side of Building 329, during the Phase II RI. PCBs and SVOCs were also detected in excess of LOCs, in surface soil collected at a transformer pad. In addition, SVOCs and metals were reported above LOCs in a sediment sample collected from a swamp southeast of the building. Additional sampling performed in 2001 delineated the extent of the soil contamination at the site. One monitoring well was installed in 2002. Analytical data from the monitoring well indicate that the groundwater quality has not been impacted by the soil contamination at the site. A HHRA will be performed for the site and recommendations presented to address all media.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS:
SVOCs, PCBs, Metals
MEDIA OF CONCERN:
Soil, Sediment
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

In 2003, PICA-104, 107, 109, 138, 147 and 210 were listed as response complete in AEDB-R and will be addressed under PICA-108.

Part of PICA-108 = PICA-147, Site 137 Administration Bldg 382

SITE DESCRIPTION

Building 382 was constructed in 1942 as a general-purpose administration building. According to engineering drawings from the mid-1960s, waste products, resulting from dredging operations in Picatinny Lake, were buried in disposal pits between Buildings 382 and 321, along with ammunition boxes and tubes.

Phase II RI activities conducted at the site in 1996 included the performance of geophysical surveys, the excavation of test pits, the installation of monitoring wells and the collection of soil and groundwater samples. The geophysical surveys were conducted to locate the waste disposal areas. Test pits, excavated to characterize the potential waste areas, did not uncover any buried ordnance. However, construction debris was identified in each pit, including large pieces of scrap metal, reinforced concrete and piping. During the RI, elevated levels of SVOCs were identified in soil adjacent to a transformer pad; elevated levels of arsenic were detected in surface and subsurface soil near the waste disposal areas. Additional sampling was conducted in 2001 to delineate the extent of the soil contamination at the site. Results of a HHRA indicate the risks and hazards from soil exposure at the site are below the target levels of 1×10^{-4} and 1, respectively. In addition, TCE was reported in both monitoring wells at the site.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS:
TCE, SVOCs, Arsenic
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

In 2003, PICA-104, 107, 109, 138, 147 and 210 were listed as response complete in AEDB-R and will be addressed under PICA-108.

Part of PICA-108 = PICA-210
Building321

SITE DESCRIPTION

Building 321, constructed in 1903, is located in the Powder Production Area. This building originally served as a storehouse for fuzed projectile "O." The building was adapted for laboratory and machine shop use in the early 1960s, and was converted to its present use as an administrative office in the early 1980s. The area around Building 321 is paved on the southeast side, with two abandoned railroad tracks running along the side of the building. The rail line closest to the building was most likely a loading and unloading area for the building, since there is a loading dock on this side of the building. Near one of the former loading docks, on the western side of the building, the porch floorboards are discolored, possibly oil soaked. It appears to be the result of spills occurring near the door area. USACHPPM collected two samples from the surface soil, under the 20 feet long by 6 feet wide oil stain on the porch. The samples were analyzed for metals, SVOCs, PCBs, pesticides and explosives. The analytical results indicated that arsenic and zinc exceeded their LOCs.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS OF CONCERN:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

During excavation of the sewer line southeast of Building 321, hydrocarbon odors were noted from the excavated soil. Two samples were collected from the staged soil piles and the trench. BTEX compounds were detected in the soil pile samples, but the concentrations were below LOCs. Soil samples collected from the sewer line trench also did not contain any VOC concentrations above LOCs, but lead and chromium were detected in excess of their LOCs.

In order to delineate the extent of the reported soil contamination, additional soil samples were collected near the oil stained floorboards, and on each side of the replaced sewer pipe in 2000. Results of the samples collected near the floorboards identified elevated levels of zinc. No exceedances were detected in the subsurface soil samples collected near the sewer pipe. No additional sampling is proposed for this site. Results of a HHRA indicate the risks and hazards from soil exposure at the site are below the target levels of 1E-4 and 1, respectively.

An interium removal action is planned (late 2003) to excavate and dispose of the small area of zinc-contaminated soil.

In 2003, PICA-104, 107, 109, 138, 147 and 210 were listed as response complete in AEDB-R and will be addressed under PICA-108.

PICA-111, Site 142
Former Bldg 435, Propellant Solvent Mixing

SITE DESCRIPTION

This site consists of former Building 435 and the surrounding area. Bldg 435 was constructed in 1918. Information regarding the use of Bldg 435 was unavailable between the years of 1918 and 1950. In the early 1950s, the building was used for pulverizing operations in the preparation of experimental propellants. The activities involved the mixing of potassium nitrate with sulfur and charcoal to form black powder. Potassium perchlorate was then mixed with the black powder to make a detonating agent. Pulverizing operations at Bldg 435 ceased in 1976. The building was subsequently used to mix solvents for propellant production. The 1991 ANL RI Concept Plan indicated that ethyl acetate and acetone were potentially used in Bldg 435. No information was available on when solvent mixing operations were discontinued. Bldg 435 was demolished under TECUP in Sept 2000.

A RCRA closure was performed at Bldg 435 in 1991. Two surface soil samples were collected outside the building. The analytical results indicated that copper was the only compound detected above its LOC. In December 1992, correspondence to PTA, NJDEP stated that the closure was incomplete and would require further investigation under CERCLA. In order to delineate the extent of soil contamination at this site, four soil samples were collected in 2000. No LOC exceedances were identified in the soil samples. A very high lead concentration was detected in the sediment sample collected from the seep vat. Metals and perchlorate were detected at concentrations exceeding LOCs in the groundwater sample. Lead and perchlorate (600 ppb) contamination was delineated in 2001. Estimated cancer risks are below or within USEPA's target range of 1E-4 to 1E-6 for all exposure scenarios. The estimated non-cancer hazards are all below USEPA's target threshold of 1. However, results of the site specific lead exposure assessment indicated lead is a concern at the site. The adult lead model indicated that lead poses a health risk.

In 2003, PICA-106, 113, 115, 144 and 203 were listed as response complete in AEDB-R and will be addressed under PICA-111.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS:
Metals, Perchlorate
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS, RD/RA (funded in FY03)
FUTURE IRP PHASE:
LTM

PROPOSED PLAN

A FS to include a PP and ROD will be completed.

The lead and perchlorate-contaminated soil (178 cy) will be removed (funded in FY03).

Institutional controls and LTM will follow.

PICA 106, 113, 115, 144, 203 are considered response complete.

Part of PICA-111 = PICA-106, Site 125
Bldg 172 & 183, Off. Bldg & Lubricant Test Area

SITE DESCRIPTION

This site is approximately 1.5 acres in area, and consists of Buildings 172 and 183. Building 172 was constructed in 1942 as an ordnance administration building, and is currently still used for administrative purposes. Building 183, constructed in 1945, is a lubricant testing area.

According to PTA documentation, two PCB-containing transformers were located at Building 183. One of the transformers caught fire in March 1989, and subsequently spilled PCBs. This spill was reportedly cleaned up; however, specific information regarding this action was unavailable.

Surface soil samples collected during the Phase I RI did not contain any concentrations in excess of LOCs. Carcinogenic human health risk was below 1×10^{-6}. Likewise, the non-carcinogenic hazard was below the target level of 1. However, in response to NJDEP's request for further investigation of the PCB remediation area, four subsurface soil samples were collected in this area, and analyzed for PCBs. No samples contained PCBs at concentrations above LOCs. No further sampling is proposed for this site.

In 2003, PICA-106, 113, 115, 144 and 203 were listed as response complete in AEDB-R and will be addressed under PICA-111.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS:
PCB
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Part of PICA-111 = PICA-113, Site 144
Bldg 462, Propellant Finishing

SITE DESCRIPTION

Bldg 462 has been used for various munitions manufacturing processes since its construction. In the 1940s, finished gun bags were transported from Building 462 via railroad to various storehouses, packing, and shipping buildings for final preparations before shipment off post. In 1947, Building 462 was temporarily converted to a rocket facility. During the Vietnam War, the building was used as a solventless propellant finishing facility. According to PTA safety files, Building 462 was used for explosive chemical manufacturing in November 1993. The building is currently used in the research and development of energetic materials.

Four surface soil samples were collected at this site during the Phase I RI and analyzed for VOCs, SVOCs, explosives, metals, and cyanide. The analytical results indicated no analytes were detected above LOCs. However, an evaluation of area-wide groundwater results indicated that PCE and TCE exceeded their LOCs. Carcinogenic human health risk does not exceed 1×10^{-6}. Likewise, non-carcinogenic hazard is below the target level of 1. In response to NJDEP's request for additional samples, one soil boring was drilled downgradient of the catch tank, at the southern side of the building, and a soil sample was collected from a rock-lined drainage ditch. The soil samples were analyzed for VOCs, SVOCs, PCBs, metals, and explosives. No samples contained concentrations in excess of LOCs and no further sampling is proposed for this site.

In 2003, PICA-106, 113, 115, 144 and 203 were listed as response complete in AEDB-R and will be addressed under PICA-111.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS:
VOCs
MEDIA OF CONCERN:
Groundwater
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Part of PICA-111 = PICA-115, Site 146 Bldg 497, Powder Pressing

SITE DESCRIPTION

Building 497 was constructed in 1956 as a mix house. In 1971, Building 497 was used for powder pressing operations. The building was demolished in September 2000 under TECUP. A dumping and debris area is located in the woods southwest of the building.

Surface soil samples collected during the Phase I RI were analyzed for VOCs, SVOCs, explosives, metals, and cyanide. Analytical results of the surface soil samples indicated lead concentrations in excess of its LOC. Human health risk falls within the target range (1×10^{-4} to 1×10^{-6}). The hazard index exceeds the target level of 1. Results of the lead risk model indicate lead is a potential health concern at the site. Modeled risk to certain avian species was deemed high. In response to NJDEP comments on the Phase I RI report, additional soil samples were proposed for this site, but due to demolition and regrading activities at the site, only one sample was collected in the dumping and debris area. This sample did not contain elevated chemical concentrations. No further sampling is proposed for this site.

In 2003, PICA-106, 113, 115, 144 and 203 were listed as response complete in AEDB-R and will be addressed under PICA-111.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS:
Lead
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Part of PICA-111 = PICA-144, Site 109 Pyrotechnic Plant Bldg 445

SITE DESCRIPTION

This 1.6-acre site consists of Buildings 445 and 445-D. Both buildings were used for the mixing, manufacturing and storage of pyrotechnics to include single-, double-, and triple-base propellants.

Building 445 was originally constructed as a gun-bag loading facility, where propellants were loaded into gun-bags. Sumps located downgradient of each building, received washdown water, which eventually discharged to Picatinny Lake. Washdown water was also discharged to an evaporation bed. Solid residues from the evaporation bed were disposed at the PTA Burning Ground. Both buildings were declared structurally unsound, and demolished under TECUP in 1997.

Phase II RI activities conducted at this site included the installation of three monitoring wells and the collection of soil, groundwater and sump samples. The RI results identified surface water and sediment contamination in the sumps, and 2,4-DNT and metals in the soil at concentrations greater than LOCs. Results of a risk assessment, to evaluate humans' exposure to contaminated surface water and sediment within the sumps, indicate that the cancer risks are below the target level of 1×10^{-4} but the noncancer hazard exceeds the threshold value of 1. However, actual exposure to the impacted media within the sumps is expected to be minimal.

Additional sampling conducted in 2001 has delineated the extent of the soil contamination. A human health risk assessment will be completed to determine the risks and hazards posed by the residual soil contamination at the site. A feasibility study may be necessary to address the impacted soil at the site. The sump was removed in 2003 along with any impacted soil.

In 2003, PICA-106, 113, 115, 144 and 203 were listed as response complete in AEDB-R and will be addressed under PICA-111.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS:
Ammonia, Explosives, Metals, SVOCs
MEDIA OF CONCERN:
Soil, Sediment, Surface Water
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Part of PICA-111 = PICA-203
Former Poison Gas Lab

SITE DESCRIPTION

From about 1922 until 1926, former Buildings 333 and 347 were used as a poison gas laboratory and sample handling house, respectively. Work at these facilities included laboratory testing using normal poisonous gases in experiments for propellants. Following an explosion in 1926, the buildings were never rebuilt. The current Building 445 complex likely overlies most if not all of the former buildings.

In1918, a 10-foot by 12-foot concrete solvent vault was located near Building 332. No information is available on the depth or volume of the vault. It is not known whether the vault is still present or how it was abandoned.

Environmental samples collected, during the CHPPM investigation in 1997, detected arsenic and lead in the groundwater in excess of their respective LOCs. No exceedances were reported for the soil samples. In order to confirm the results of the CHPPM investigation, investigate the concrete vault area, and obtain additional data to perform a HHRA, three soil borings were drilled at the site in 2001. Surface and subsurface soil samples were collected and analyzed for VOCs, SVOCs, explosives, metals, and cyanide. No exceedances of LOCs were reported in the soil samples. A human health risk assessment (HHRA) will be prepared to quantify the risks and hazards associated with exposure to the compounds at this site.

In 2003, PICA-106, 113, 115, 144 and 203 were listed as response complete in AEDB-R and will be addressed under PICA-111.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS OF CONCERN:
Metals
MEDIA OF CONCERN:
Groundwater
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

PICA-114, Site 145
Bldg 477, Explosive & Propellant Mix Area

SITE DESCRIPTION

Building 477 was constructed in 1945 for use in medium caliber projectile loading activities. The building was converted to a laboratory in the early 1960s for mixing and drying explosives, propellants, and pyrotechnics. Historically, explosives contaminated wastewater was generated daily at Building 477 from the washdown of machines and walls following loading activities, and from dust control devices. The wastewater was discharged to a sand filter. This sand filter is located near the northeast corner of the building, in an area where engineering drawings indicate a drain and settling tank.

A remedial investigation was conducted at the site in 1994 including surface soil, subsurface soil, and groundwater sampling. Groundwater samples exceeded LOCs for metals. The HHRA did not calculate carcinogenic risk because slope factors were not available for the site COCs. The HI for the site exceeded 1 for one of the three populations. The Phase I RI recommended no further action for the site. However based upon regulatory comment, additional RI activity was performed in 1997 including Geoprobe, surface soil, surface water, and sediment analyses for metals and explosives. A revised risk assessment was performed which also returned an HI greater than one mainly associated with manganese inhalation. The human health risk is within USEPA's target range of 1E-4 to 1E-6 for all populations. The additional RI recommended that this site proceed to a feasibility study with the likely remedial alternative being institutional controls. Groundwater is being addressed in the Mid-Valley groundwater investigation.

A ROD has been submitted for this site recommending institutional controls.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
Metals, Explosives
MEDIA OF CONCERN: Soil, Sediment, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
LTM

PROPOSED PLAN

An interim removal action will be performed to remove and dispose of the settling tank and sand filter on the northeast corner of the building (funded in FY03).

Institutional controls will be maintained as a remedy for this site.

PICA-122, Site 126
Propellant Testing, Bldg 197

SITE DESCRIPTION

Building 197 is in an area of PTA used for chemistry and other testing laboratories. The building was constructed in 1942 for surveillance testing. The building is now used for propellant testing, which is conducted in a conditioning chamber in the building. The building had an explosives allowance for up to 5 lbs of explosives.

The Phase I RI conducted in 1994 included the collection of surface soil samples for analysis of VOCs, BNAs, metals, cyanide, explosives, and pesticide/PCBs. Metals were detected in exceedance of LOC. In 2000 and 2001, additional investigation was performed for the Phase I 2A-3A Sites RI. This investigation consisted of the collection of surface and subsurface soil for arsenic, copper, and cadmium. As a result of the investigation, the extent of contamination has been delineated and no further sampling is proposed.

Estimated risks for the realistic exposure scenarios are within or below USEPA's target range of 1E-4 to 1E-6. The estimated hazards for the construction worker exceed the target threshold of 1. The primary risk and hazard drivers are arsenic and cadmium.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
LTM

PROPOSED PLAN

A PP and ROD will be completed. An interim removal action is planned to address the metals-contaminated soil on the northeast side of Building 197 (funded in FY03). Institutional controls will be recommended as the remedy for this site.

PICA-134, Site 70
R&D Lab/ Chem Storage 3000-Area

SITE DESCRIPTION

This site consists of Building 3028, a research and development laboratory, and Building 3029, a general purpose warehouse. Bldg 3028 operated as a supply-storehouse until 1980. Between 1980 and 1982, the building was renovated to be used as laboratories and offices. Use of the research and development laboratories began in 1982. Bldg 3028 is currently used as an explosive chemistry laboratory. The transformer, located on the western side of Bldg 3028, had an Aroclor-1260 concentration of 194 ppm. The transformer was removed.

Mercury vapor was discovered in one of the laboratories during air sampling in 1990. It was suspected that the mercury came from damaged test equipment. The mercury contamination was remediated. Small amounts of mercury may have also gone down sink and floor drains, as a result of periodic mercury spills that occurred during routine laboratory activities. Radioactive material and equipment with radioactive sources were periodically used in the building. All radioactive materials have reportedly been removed from the building. In 1991, a RCRA closure was performed for specific laboratory areas inside Bldg 3028. As part of the closure, the designated areas were cleaned. In 1992, NJDEP approved the closure.

Bldg 3029 is connected to the north end of Bldg 3028. The building, currently vacant, once operated as an unofficial warehouse for storage of chemicals and equipment used in Bldg 3028. In 1991, a RCRA closure was performed to remove chemicals and equipment from the building. The building was demolished and a surveillance facility was constructed in its place. A clean closure was approved by NJDEP in 1992.

Phase II RI activities were conducted in 1996. The radiological survey detected two samples with radiological concentrations above LOCs. During the RI, beryllium and PAHs were detected above LOCs in soil. Results of a HHRA indicated that the risks and hazard indices associated with exposure to soil, at the site, do not exceed the target levels. In response to regulatory comments on the RI report, one soil sample was collected for PAHs during additional RI activities in 2001. No exceedances of PAH LOCs were reported in the sample. No further sampling is proposed. State levels for some contaminants have been exceeded.

In 2003, PICA-012 and 018 were listed as response complete in AEDB-R and will be addressed under PICA-134.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS:
PAHs, Beryllium
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS, LTM
FUTURE IRP PHASE:
LTM

PROPOSED PLAN

A PP and ROD will be completed. Institutional and engineering controls are expected.

Part of PICA-134 = PICA-012, Site 83
Bldg 3022 Phys Anal Lab/Energ

SITE DESCRIPTION

The majority of Bldg 3022 is currently a laboratory where chemistry and physics research is conducted for energetics development and testing. The northern wing of Bldg 3022, formerly Building 3021, is currently used to store radioactive source materials. All radioactive materials are stored in double-sealed containers, and there has been no reported detection of radiation leaks.

In 1991, a RCRA closure was performed for specific laboratory areas within the building. The closure included removing waste from the first-floor laboratories, and washing the walls and floors. NJDEP reported that no further action was required for the closure area. Phase II RI activities included a radiological survey and collection of soil samples. No soil samples collected during the radiological survey exceeded the LOC of 11 pCi/g. Marginal exceedances of LOCs were identified for arsenic and lead in surface soil samples collected during the Phase II RI at the site. Results of a HHRA for soil exposure at the site indicated that the risks and hazard indices are below the target levels of 1 X 10^{-4} and 1, respectively.

NJDEP and EPA have not requested any additional sampling and no additional RI activities are planned for the site. An FS has been recommended to address soil contamination above LOCs.

In 2003, PICA.-012 and 018 were listed as response complete in AEDB-R and will be addressed under PICA-134

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Part of PICA-134 = PICA-018, Site 30
Flourochemical Storage (3045)

SITE DESCRIPTION

Building 3045 consists of an earth-covered concrete structure constructed in 1918 as a magazine to store ammunition and gas cylinders. Building 3045 was formerly used to store rocket propellant fuels in the 1960s. Following a 1991 RCRA closure, the building has been inactive. According to NJDEP correspondence, the closure area does not require further action.

Phase II RI activities, conducted in 1996, included the collection of surface and subsurface soil samples around the magazine. SVOC and arsenic soil contamination was identified during the RI, in a small area, in front of the magazine and behind the blast wall. Results of the HHRA performed for this site indicate that the risk from exposure to surface soil equals the target level of 1 x 10^{-4}, with arsenic the primary risk driver. Additional samples, collected in 2001, completed the delineation of the arsenic and SVOC contamination. A human health risk assessment will be performed with the data collected in 1996 and 2001.

In 2003, PICA.-012 and 018 were listed as response complete in AEDB-R and will be addressed under PICA-134

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS:
SVOCs, Arsenic
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

PICA-135, Site 71
Bldgs in the 900-Area

SITE DESCRIPTION

Building 910 was constructed in 1950 for use as a storage magazine. The building, located on the northwestern shore of Picatinny Lake, was utilized until the 1970s for the environmental testing of munitions, to determine the effect of temperature and humidity on propellants and explosives. As of 1991, the building was empty except for five walk-in ovens used for drying propellants and explosives.

In 1991, RCRA closure activities were performed at Building 910 by washing down the walls and walk-in areas, and removing any remaining debris. The subject area received a clean closure from NJDEP in 1992. The RI conducted at the site in 1996 included the collection of soil, groundwater and sediment samples. Analytical results identified PAHs and metals in the surface soil, as well as metals in the sediment at concentrations in excess of their respective LOCs. Results of a HHRA for soil, sediment and surface water exposures at the site indicated that the risks and hazard indices are below the target levels of $1x\ 10^{-4}$ and 1, respectively.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS:
PAHs, Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS, LTM
FUTURE IRP PHASE:
LTM

In response to regulatory comments on the RI report, additional soil samples were collected in 2001 to delineate the extent of soil contamination. Based on these results, the PAH contamination has been delineated. One additional sample, collected in 2002, completed the arsenic delineation. An FS may be necessary to address soil contamination above LOCs. Institutional controls will be considered as a potential remedy. The sediment contamination will be evaluated as part of Site PICA-057 (Picatinny Lake). State levels for some contaminants have been exceeded.

In 2003, PICA-137,153 and 154 were listed as response complete in AEDB-R and will be addressed under PICA-135.

PROPOSED PLAN

A FS to include a PP and ROD will be completed. Institutional controls will be recommended as a remedy for this site.

PICA-137,153 and 154 are considered response complete.

Part of PICA-135 = PICA-137, Site 82
X-Ray Photo Processing Lab, Bldg 908

SITE DESCRIPTION

Building 908 was constructed in 1918 for use as a general purpose magazine. In 1945, a request was made to equip Bldg 908 with a radiographic inspection laboratory, that would x-ray loaded shells for manufacturing defects. By 1964, several x-ray units were in operation in the building. There have been numerous concerns for high-energy gamma rays produced by the betatron x-ray units at the building. During periods of operation, despite the thick protective barriers and increased shielding, high levels of radiation were recorded in the building during radiation surveys conducted by PTA. Building 908 also housed a silver recovery unit from 1963 to 1983.

Phase II RI activities performed at this site included a radiological survey and the collection of soil, surface water and sediment samples. The radiological survey identified elevated alpha radiation and radium-226 levels near the southeastern portion of the building. Radium-226 has also been detected in soil at elevated levels, and is a contaminant of concern due to the radiological nature of operations performed at the site. However, HHRA results indicate that the risks and hazards associated with soil, sediment and surface water exposure at the site are below the target levels of 1×10^{-4} and 1, respectively. Additional samples were collected in 2001 to delineate the arsenic contamination in the soil. A FS will be prepared to evaluate remedial alternatives for the residual soil contamination.

In 2003, PICA-137,153 and 154 were listed as response complete in AEDB-R and will be addressed under PICA-135.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS:
Radiologicals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Part of PICA-135 = PICA-153, Site 158
High-Exp Magazine, Bldg 926

SITE DESCRIPTION

Building 926, located along the northern shore of Picatinny Lake, was built in 1922 as a high-explosive magazine. Building 926 was used to store lead azide, lead styphenate, and mercury fulminate until the mid 1960s. According to PTA documentation, all styphenates and azides were removed in the early 1980s. Concerns for contamination at Building 926 are a result of explosives being stored above or actually in Picatinny Lake. This storage method was utilized to decrease the electrostatic sensitivity of explosives by maintaining a humid environment.

Phase II RI activities conducted in 1996 included the collection of soil, surface water and sediment samples. Elevated levels of various metals were detected in two sediment samples, collected from Picatinny Lake, adjacent to the site during the Phase II RI. Risks and hazards from exposure to impacted media are below the target levels of $1x\ 10^{-4}$ and 1, respectively. Results of a sediment bioassay did not indicate significant toxicity or adverse effects to the test organisms. Additional sampling performed in 2001 has characterized the extent of the sediment contamination at this site. No further sampling is proposed.

In 2003, PICA-137,153 and 154 were listed as response complete in AEDB-R and will be addressed under PICA-135.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
Arsenic, Ammonia, Boron
MEDIA OF CONCERN:
Sediment
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Part of PICA-135 = PICA-154, Site 159 Supplies & Service, Bldg 975

SITE DESCRIPTION

Building 975 was constructed in 1942 for use as a bomb shelter. It was later utilized as the main office for the 800 building area. Building 975 was also used to store packed shells and explosives prior to shipment. In 1998, the building was demolished under TECUP. PTA engineering drawings indicated that a sump, on the south side of the building, may have received water from building washdown activities. Lead azide was reportedly taken from Building 926 in 1983, and buried behind Building 975.

Phase II RI activities conducted in 1996 included performance of geophysical surveys, excavation of one test pit, performance of a radiological survey, installation of one monitoring well, and the collection of soil, groundwater, surface water and sediment samples. The geophysical surveys were conducted to locate the sump and the lead azide disposal pit. Samples collected from the sump during the Phase II RI indicated elevated levels of several metals in the sediment. A test pit and soil boring were used to characterize the anomaly, believed to be the lead azide pit, but no physical or chemical evidence of the pit was uncovered. Samples collected from the stormwater outfalls at Green Pond Brook (GPB) contained concentrations of SVOCs, pesticides, and metals above their respective LOCs. A bioassay conducted on sediment collected from GPB indicated significant mortality in one test species, but no adverse effect to the other test species, suggesting there is some potential for the sediment to affect certain benthic organisms. Human health risks and hazards from exposure to impacted surface water and sediment, within the sump and GPB, are below the target levels of $1x\ 10^{-4}$ and 1, respectively. One additional sediment sample was collected from GPB in 2001 to delineate the vertical extent of contamination. A risk assessment will be prepared to evaluate the risks and hazards associated with soil exposure at the site. Removal of the sump will be conducted to eliminate this potential source.

In 2003, PICA-137,153 and 154 were listed as response complete in AEDB-R and will be addressed under PICA-135.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS OF CONCERN:
Metals
MEDIA OF CONCERN:
Sediment
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

PICA-136, Site 79
High Pressure Boiler, Bldg 3013

SITE DESCRIPTION

Built in 1901, Building 3013 was originally used as a main boiler house, but is currently used as an auxiliary boiler house. The building was also utilized in the production of explosives during World War I and World War II, and was expanded in the 1940s to include a water treatment system. In 1967, two 20,000-gallon USTs were installed for storage of fuel oil for the boiler. These USTs were in service until their removal in 1990. Discolored soil was noted after the tanks were removed. Currently, Bldg 3013 is inactive.

In 1991, a RCRA closure was performed that included removing waste material from the building, and decontaminating the waste storage area, in the westernmost corner of the building. In 1992, NJDEP approved the closure area. As a result of the identification of discolored soil during the removal of the two USTs, ~1,500 tons of contaminated soil were removed from a 15-ft deep excavation. Elevated levels of TPH were detected in the soil samples; VOCs and SVOCs were detected in the groundwater. In response to recommendations from the previously mentioned investigation, additional soil and groundwater samples were collected in 1994 to better define the contamination near the former USTs. No contaminant concentrations were reported above LOCs.

Phase II RI activities were conducted at the site in 1996. During the RI, TPHs were detected at high levels in three wells. Lead, possibly related to leaded fuel, was reported at concentrations above LOCs in groundwater and soil. SVOCs and arsenic were also detected at concentrations in excess of LOCs in the soil. Additional investigations performed in 2000 delineated the extent of the arsenic and lead contamination in soil; however, additional samples were collected in 2001 to complete the PAH delineation in soil. A HHRA will be performed for the site, and recommendations presented to address the existing contamination.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
SVOCs, TPH, Metals
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
RI/FS, RD, RA, LTM

PROPOSED PLAN

A FS to include a PP and ROD will be completed. Contaminated soil will likely be removed.

Arsenal-wide engineering controls will be funded under this site.

Compile a comprehensive documentation package that summarizes the underlying assumptions, rationale and conclusions regarding the minimal health risks at the site, describes the installation's Master Planning process as it functions to limit the chances for future exposure, and highlights the unique conditions of sites like Site 79 on active Army installations. Present the documentation to the regulatory agencies at the appropriate level, with the eventual expectation that existing site controls will be viewed as responsibly protective.

PICA-143, Site 108
Ordnance Facility, Bldgs 717, 722, 732

SITE DESCRIPTION

This large site consists of Building 717, an ordnance facility, Building 722, a physics and flare-testing laboratory, and Building 732, a physics laboratory and ordnance facility. All three buildings are located along the southwestern shore of Picatinny Lake. Building 717 was used as a major-caliber loading facility. In the 80s, the building was converted to ARDEC's Electromagnetic and Electrothermal/Chemical Armament Research Facility. This experimental station examines physical thrusts generated by addition of high electrical current to chemical oxidizers. Building 717 is currently still used for this purpose. Flares were tested on a peninsula (Flare Island), approximately 300 ft northeast of Building 717, from WWII until the 1970s. Several transformers at the site had contained PCBs.

Building 722 was originally used as an office and testing laboratory, but was later converted to a flare testing facility. In 1991, Building 722 was turned over to the Fire Support Armaments Center, to support the operations of the Electric Gun Laboratory/Range in Building 717, but it is currently vacant. A dark room, operated in Building 722, reportedly disposed of photographic processing chemicals down sinks and drains, which discharged to Picatinny Lake. Radiation surveys of the flare tunnel, performed because of the presence of a radiological source, indicated radiation readings above background.

Building 732 was used as a pyrotechnic facility. Wastewater from Building 732 was reportedly discharged to Green Pond Brook. Building 732 is currently vacant and inactive.

Phase II RI activities included performance of a soil-gas survey, performance of a radiological survey, installation of three monitoring wells, and the collection of soil, groundwater, surface water, sediment and sump samples. RI results have identified several AOCs at the site, including metals contamination at Flare Island, metals and mirex contamination in the catch basins and sumps of Building 732, soil contamination on the south side of Building 722, and PCB contamination near a transformer pad. Results of bioassays conducted on site samples found significant toxicity to aquatic organisms, but no adverse effects on soil invertebrates. Additional sampling was performed in 2001 to delineate the extent of contamination at the various AOCs. The sumps at Building 732 were removed in 2003. Post-excavation sample results indicate additional soil will have to be removed adjacent to the former sumps. A HHRA will be prepared for this site.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
SVOCs, PCBs, Metals
MEDIA OF CONCERN:
Soil, Sediment
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
LTM

PROPOSED PLAN

A FS to include a PP and ROD will be completed. Institutional controls will be recommended as a remedy for this site.

PICA-155, Site 178
TECUP Buildings

SITE DESCRIPTION

Site 178 consists of buildings that have been demolished under TECUP. TECUP was instituted in the 1980s to safely demolish buildings, which were potentially contaminated. The buildings were used for a variety of purposes ranging from munitions production to inert storage. The majority of TECUP operations were performed in the 1980s. Prior to 1981, formal records of building demolition operations were not maintained. Between 1981 and 1989, approximately 145 buildings at PTA were demolished under TECUP, after being decontaminated by fire or washing. After the decontamination process, the buildings are demolished and the area graded. In the past, buildings were sometimes demolished and buried in place without any preparatory decontamination measures. After 1989, the frequency of TECUP operations dropped off until recently. Since 1998, TECUP operations have resumed and nearly all buildings, along the eastern shore of Picatinny Lake, have been demolished.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
SVOCs, Dioxins, Lead
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS, LTM
FUTURE IRP PHASE:
LTM

During the Phase II RI, three former building areas were investigated. Soil samples were collected at Building 269, a former primer loading facility; Building 557, a former propellant plant; and Building 565, a former propellant plant. SVOCs, dioxins and lead were detected above LOCs in the soil at these former buildings. The SVOC and dioxin concentrations may be related to the use of diesel fuel and/or treated wood to burn the buildings. Additional samples were collected at all three former building areas in 2001to delineate the existing soil contamination. A HHRA will be completed for each former building and an FS prepared to address the contamination.

PROPOSED PLAN

A FS to include a PP and ROD will be completed. Institutional controls will be recommended as a remedy for this site.

PICA-158, Site 175
Helicopter Maintenance Bldg 3801

SITE DESCRIPTION

This site is frequently referred to as the Army Aviation Support Facility #2, which is operated by the New Jersey Army National Guard. The site was unimproved woodlands until the heliport was constructed in the late 1960s or early 1970s. The site is a fenced area that includes a helicopter maintenance and aviation building (Building 3801) and a heliport.

Petroleum spills, during product transfer and valve drips, frequently occurred at the USTs used to store the helicopter fuel until they were upgraded in the late 1990s. Discharge from Building 3801 floor drains terminates at a rip rap outside the southeast fence boundary. In November 1988, a 15,000 gallon UST, located west of the building, failed a pressure test. The tank was reportedly excavated, repaired and the excavation backfilled. In 1991, a RCRA closure was conducted of an outdoor 90-day drum storage area, located on the south side of the Building 3801. As part of the closure, contaminated soil beneath the storage area was excavated and disposed of at an off-site location. Post-closure soil samples exceeded the soil cleanup standards for base neutrals.

Potential sources of contamination, identified at the site, include three USTs used to store fuel for the helicopters, a solvent basin for cleaning helicopter parts, a 90-day RCRA outdoor drum storage area, a transformer located inside the building, discharge from floor drains, and two leaching pits used to collect runoff from the parking lot and heliport asphalt. With the exception of the 90-day RCRA storage area, all these potential sources were investigated during the 1996 Phase II RI.

Phase II RI activities included the installation of three monitoring wells and the collection of soil, groundwater, surface water and sediment samples. Methylene chloride was identified, above its LOC, in one monitoring well at the site. No elevated chemical levels were detected in soil, surface water or sediment samples collected at the site. Since no chemical concentrations exceeded the screening criteria, risk and hazards were not quantified for the site. Additional sampling, performed in 2000, to investigate the RCRA closure area did not detect any elevated chemical levels. No further sampling is proposed.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
Methylene Chloride
MEDIA OF CONCERN:
Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
LTM

PROPOSED PLAN

A FS to include a PP and ROD will be completed. Institutional controls will be recommended as a remedy for this site.

PICA-161, Site 174
Sewage Trmt/Chem Lab/Firehouse/Prkg

SITE DESCRIPTION

Current Building 3420 is an active pumping station; the old sewage treatment plant and supporting structures have been demolished. A 1947 aerial photograph shows a pump station, at least two sludge holding tanks, and a square concrete structure partitioned into four sludge drying beds. Old Building 3420 accepted and processed all the runoff and waste waters from the 3300 and 3400 series buildings for an unknown period of time. It is likely that it received laboratory chemicals, metals, pyrotechnics, propellants, and high explosives that were conveyed through building discharge points and surface runoff. According to PTA inspection reports, sewage spills of up to 5,000 gallons were common at the site.

Treated water from this site was conveyed underground in 2-ft wide concrete pipes. Brick-lined wells, approximately 3 ft deep, connected the concrete pipes, which conveyed the water from the various stages of treatment. The treated water was discharged to a stream northeast of the site, which eventually drains to Green Pond Brook.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
Pesticides, Metals, SVOCs
MEDIA OF CONCERN:
Surface Water, Sediment
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS (funded)
FUTURE IRP PHASE:
LTM

Phase II RI activities, conducted at the site in 1996, included the installation of one monitoring well and the collection of soil, groundwater, surface water and sediment samples. Elevated levels of SVOCs, pesticides, and metals were detected in the surface water and sediment samples collected from the stream, northeast of the site. The HHRA, completed for this site, indicated that the risk and hazard from soil exposure are below the target levels of 1×10^{-4} and 1. Results of a sediment bioassay conducted as part of the Phase II ERA did not indicate significant toxicity, as compared to the laboratory control and reference samples. The brick-lined wells, associated piping and any impacted soil were removed in 2003. A feasibility study may be necessary to address the impacted soil.

In 2003, PICA-159, 160 and 189 were listed as response complete in AEDB-R and will be addressed under PICA-161.

PROPOSED PLAN

A FS to include a PP and ROD will be completed (funded in FY04). Institutional controls will be recommended as a remedy for this site.

PICA-159, 160 and 189 are considered response complete.

Part of PICA-161 = PICA-159, Site 172
Park Area Across From Bldg 3328

SITE DESCRIPTION

Site 172 consists of an approximately 300-ft long asphalt parking area, located across from Building 3328. According to the 1991 ANL RI Concept Plan, PTA personnel reported that oil was purposely spilled on the parking area to make it look old for an inspection. Reportedly, many types of oil were spilled on the asphalt.

Soil samples collected beneath the asphalt parking lot during the Phase II RI did not detect any chemical levels above LOCs. Since no chemical concentrations exceeded the screening criteria, risk and hazards could not be quantified for the site. Due to the low habitat quality, the site was not evaluated in the Phase II Ecological Risk Assessment (ERA). No further sampling is proposed for the site.

In 2003, PICA-159, 160 and 189 were listed as response complete in AEDB-R and will be addressed under PICA-161.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
None
MEDIA OF CONCERN:
None
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Part of PICA-161 = PICA-160, Site 173
Chem Lab and Admin Bldg 3404

SITE DESCRIPTION

Originally built in 1952, Building 3404 was used as a maintenance shop and a test laboratory for solid propellant until 1967. Documents from 1967 to 1987 refer to the building as the Materials Preservation and Protection Lab, where flame retardant, mercury, solvents, acids, and wood preservatives were used. From approximately 1977 to 1987, the building was also used to store wood, paper, and cardboard boxes. In 1987, Building 3404 was emptied of its contents and renovated to provide equipment storage space for the New Jersey Army National Guard. According to PTA personnel, RCRA closure requirements were waived by the State of New Jersey because of renovations conducted inside the building by the New Jersey Army National Guard.

Phase II RI activities conducted at the site included the installation of one monitoring well and the collection of soil and groundwater samples. During the Phase II RI, PAHs were reported in excess of LOCs in one soil sample collected upgradient of the site. Results of a HHRA for the site indicate the risks and hazards from exposure to surface soil and subsurface soil are below the target levels of 1×10^{-4} and 1. Due to its small size, low habitat quality and urban setting, this site was not evaluated in the ERA. No regulatory comments have been received on this site, and no additional RI sampling is proposed for the site. A feasibility study may be necessary to address the impacted soil.

In 2003, PICA-159, 160 and 189 were listed as response complete in AEDB-R and will be addressed under PICA-161.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS OF CONCERN:
SVOCs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Part of PICA-161 = PICA-189, Site 186 Firehouse Bldg 3316

SITE DESCRIPTION

The Firehouse (Building 3316) is a former vehicle maintenance facility. Horse stalls replaced vehicle garages in 1946. Both garages contained a grease pit that discharged directly to the underlying soil. Wash water from the primary vehicle bay drained into a dry well before the site was repaved. The dry well is no longer used, since all wastewater is channeled into the sanitary sewer. Installation spill files contain no spill reports for Building 3316.

As part of CHPPM's Relative Risk Site Evaluation (RRSE), three monitoring wells were installed and sampled in 1997. The VOC, PCE and the metals, chromium and silver were detected in excess of their respective LOCs. The RRSE scored the site a medium risk due to the potential groundwater hazard. In order to confirm the results of CHPPM's investigation, groundwater samples were collected from the three monitoring wells in 2001 by the low-flow sampling method and analyzed for VOCs and metals. Aluminum, iron and manganese, which are attributable to the local geology, were the only compounds detected above LOC. A HHRA was performed to evaluate dermal absorption exposure to chemical in groundwater by construction/excavation workers. No carcinogenic COPCs were identified; thus no risks were quantified. The hazard was below the target level of 1.

In 2003, PICA-159, 160 and 189 were listed as response complete in AEDB-R and will be addressed under PICA-161.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS OF CONCERN:
PCE, Chromium, Silver
MEDIA OF CONCERN:
Groundwater
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

PICA-162, Site 5
Shell Burial Areas Near Site 5

SITE DESCRIPTION

The Site 5 Shell Burial Area is located northwest of Building 3150, at the intersection of Schrader Road and Gately Road. The shell burial area is in the area of an explosion crater caused by the 1926 Lake Denmark explosion. Exploded and unexploded ordnance, as well as building debris from the explosion, was deposited in the crater. The 1.5-acre area, under the control of the U.S. Naval Ammunition Depot, continued to be used as an ordnance dumping area until 1945. The area was then covered with ~20 ft of fill material, fenced, and marked with warning signs. Approximately 25 tons of debris and ordnance were deposited in both this shell burial area and the shell burial area located near Bldg 3100. Ordnance in the shell burial areas included: mines, depth charges, fuses, projectiles, explosives, ammunition, propellants, and possibly rocket fuels. A 1981 Installation Assessment addendum stated that the shell burial areas also contained acids, pickling liquors, cyanide, phenol, and metals.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS OF CONCERN:
Cyanide, VOCs (PCE), SVOCs, Metals
MEDIA OF CONCERN:
Groundwater, Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS (funded)
FUTURE IRP PHASE:
LTM

Dames and Moore performed a SI in 1989 to investigate groundwater VOC contamination at Site 5 detected in one well installed and sampled in 1981. Included, as part of the SI, was analysis of groundwater for VOCs, explosives, metals, and components of solid propellants. No compounds were detected at levels greater than levels of concern during the 1989 SI. RI activities were conducted from 1998 to 2001, including the installation and sampling of groundwater monitoring wells. Groundwater, surface soil, and subsurface soil samples were analyzed for VOCs, SVOCs, explosives, metals, cyanide, and anions. Three rounds of groundwater sampling have been conducted to date at Site 5, as part of the Phase III-1A RI. Cyanide and VOCs were detected at concentrations exceeding the LOC in groundwater, during the first round of sampling. One VOC (PCE) was present in excess of levels of concern during the two subsequent rounds of groundwater sampling. Results of the HHRA indicated the risk and hazards from exposure, at the site, are below the target levels of 1E-4 and 1, respectively. Ecological risk will be evaluated as part of the Phase III Ecological Risk Assessment to be conducted in conjuction with Phase III-2A/3A sites.

In 2003, PICA-052 was listed as response complete in AEDB-R and will be addressed under PICA-162.

PROPOSED PLAN

A FS and monitoring plan will be completed (funded in FY04). LTM is expected.

PICA-052 is considered response complete.

Part of PICA-162 = PICA-052, Site 6 Shell Burial Area (Near B-3100)

SITE DESCRIPTION

The Site 6 Shell Burial Area is located northwest of Building 3100, at the intersection of Belt Road and Main Road. The Shell Burial Area is in the area of an explosion crater caused by the 1926 Lake Denmark explosion. Exploded and unexploded ordnance, as well as building debris from the explosion, was deposited in the crater; which continued to be used as an ordnance dumping area until 1945. The area was then covered with approximately 20 ft of fill material, fenced, and marked with warning signs. Access to Site 6 is limited. Approximately 25 tons of debris and ordnance were deposited in both this shell burial area and the shell burial area, located near Building 3150 (PICA-162). Ordnance in the shell burial areas included: mines, depth charges, fuzes, projectiles, explosives, ammunition, propellants, and possibly rocket fuels. A 1981 Installation Assessment addendum stated that the shell burial areas also contained acids, pickling liquors, cyanide, phenol, and metals.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS OF CONCERN:
VOCs, SVOCs, Metals
MEDIA OF CONCERN:
Groundwater
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Explosives, VOCs, SVOCs, pesticides/PCBs, anions, and metals analysis of soil was conducted as part of the 1996 PA/SI. Based upon results of the PA/SI, RI activities were conducted from 1998 to 2000 to investigate VOCs, SVOCs, explosives, metals, cyanide, and anions in surface soil, subsurface soil, and groundwater. Metals, VOCs, and SVOCs were detected at concentrations exceeding levels of concern in groundwater, and a limited number of SVOCs were detected in soil at concentrations greater than LOC. Human health risk assessments results indicated the non-cancer hazard index of 1 was not exceeded for industrial research and construction excavation workerscenarios. The estimated total cancer risk is below the target range of 1E-4 to 1E-6 for the construction excavation worker scenario, and the within the target risk range for the industrial reasearch worker scenario (9.8E-5).

Groundwater contamination is currently being investigated as part of the Mid-Valley investigation under PICA-204.

In 2003, PICA-052 was listed as response complete in AEDB-R and will be addressed under PICA-162.

PICA-163, Site 91
Propellent/Rocket Prod 1300/1400 Area

SITE DESCRIPTION

Building 1301, constructed in 1945, is a one-story structure consisting of eight separate one-story buildings, under one continuous roof approximately 1/5-mile long. The individual buildings formed a propellant finishing plant and are located off of Double Base Road. Sections of Building 1301 were renovated in 1954 for the production of rocket powder and antipersonnel mines during the Korean and Vietnam wars. From approximately 1980 to 1993, portions of Building 1301 were used for the assembly/disassembly of rocket motors. Building 1301 has been inactive since 1993 and is currently scheduled for turn in. During its many activities, explosives, solvents, alcohols, paints, paint thinners, kerosene, lubricant oil, and spent fixer and developer from film processing have been used at Building 1301. Historically, the rooms of Building 1301 were washed down daily to remove residual explosives. The washdown water flowed into lead-lined troughs leading to lead-lined catch basins and tanks, located on the east and west sides of the building. The catch basins and tanks contained perforated metal baskets for collecting waste propellant to be disposed at the PTA Burning Ground (PICA-002). The wastewater from the catch basins and tanks discharged in the woods, west of Building 1301. A RCRA closure was conducted in 1990 for the walkway, formerly used as a temporary solvent storage area for vapor degreasing operations.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS OF CONCERN:
Metals, PAHs, PCBs, Explosives, VOCs
MEDIA OF CONCERN:
Soil, Sediment, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS (funded)
FUTURE IRP PHASE:
RD, RA, LTM

A PA/SI was conducted in 1996 for the analysis of VOCs, SVOCs, pesticides/PCBs, explosives, metals, and anions in soil and sediment. Metals, PAHs, and PCBs were detected at levels greater than levels of concern in surface soil and sediment. Based upon results of the PA/SI, RI activities were conducted from 1998 to 2000. Included as parts of the remedial investigation were a soil gas survey and VOC, PAH, PCB, explosives, and metals analyses of surface soil, subsurface soil, surface water, sediment, and groundwater. Lead was detected at concentrations in excess of LOC in paint chip samples and numerous soil samples collected in the vicinity of the catch basin discharges, in the woods west of Building 1301. Results of the HHRA indicated the risks and hazards at the site are below the target risks. Ecological risk will be evaluated as part of the Phase III Ecological Risk Assessment. All lead lined troughs and catch basins were removed in 2002 and lead contaminated soil (50 cy) directly adjacent to Building 361 was removed as part of the facilty wide sump and dry well investigation.

In 2003, PICA-021, 168, 169, 172 and 174 were listed as response complete in AEDB-R and will be addressed under PICA-163.

PROPOSED PLAN

Lead-contaminated soil (from PICA-021, 161, 168, 172) will be addressed as part of the Phase III area-wide EECA. A FS to include a PP and ROD will be completed. Upon completion of the EECA for lead contaminated soil, institutional controls will be recommended for this site.

PICA-169, 174 are considered response complete.

Part of PICA-163 = PICA-021, Site 35
Former NG Proc Area (1361A-1364)

SITE DESCRIPTION

Site 35 consists of Buildings 1361, 1361-A, 1363, 1363-A, 1364, and 1365. All six buildings are between South N.G. Road and Upper X.H.E. Road, in the southeastern portion of PTA. Building 1361 was a NG buggy storage and block breaker building. Building 1361-A housed an AST that received explosives-contaminated wastewater from NG mixing operations at Building 1373. In 1996, a RCRA closure of Building 1361-A was performed. Following closure activities, Building 1361-A was demolished under TECUP. Building 1363 was a neutralizing building for NG produced in Building 1362 and 1367. Building 1363 was decontaminated to the 3X condition in 1989. Building 1363-A was a slum house used to separate excess NG from a mixture of nitric and sulfuric acid following neutralization at Building 1363. A non-time critical removal of soil and lead lined troughs was conducted at Building 1363-A in 1995. Building 1364 was a control building for NG production operations conducted at Buildings 1362 and 1363. A satellite waste area was added to Building 1364 in 1989. It is unclear what waste this area stored, and where the area is located in the building. Building 1365 was used to store spent nitric and sulfuric acids generated at Buildings 1362 and 1367. In 1991, Building 1365 underwent RCRA closure and demolition, including the disposal of 2,000 lbs. of explosively contaminated acid as hazardous waste "discovered" in the storage tanks. All six buildings are currently inactive.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS OF CONCERN:
Metals, PAHs, PCBs
MEDIA OF CONCERN:
Sediment, Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

A remedial investigation was conducted from 1998 to 2000. The investigation included the analysis of surface water, sediment, surface soil, subsurface soil, and groundwater for VOCs, SVOCs, PCBs, explosives, metals, and anions. Sediment analysis indicates the presence of metals, PCBs, and PAHs in excess of levels of concern. Metals (including lead) and PCBs are present at elevated levels in soil, and groundwater contains concentrations of metals greater than levels of concern. Groundwater contamination is currently being addressed as part of the Mid-Valley GW Investigation. Human Health Risk Assessments were conducted as part of the Phase III-1A Remedial Investigation Report and an Ecological Risk Assessment will be conducted as part of the Phase III Ecological Risk Assessment, along with the Phase III 2A/3A. HHRA results indicated the non-cancer hazard index of 1 is exceeded for the on-site youth visitor scenario, and the estimated total cancer risks for the industrial research worker and the on-site youth scenario within the target risk range of 1E-4 - 1E-6.

In 2003, PICA-021, 168, 169, 172 and 174 were listed as response complete in AEDB-R and will be addressed under PICA-163.

Part of PICA-163 = PICA-168, Site 168 Propellent Plants/ Press House 1400, 1402 - 1403

SITE DESCRIPTION

Site 168 consists of Buildings 1400, 1402, and 1403. All three buildings were constructed in 1948 and used for the processing of solventless propellants, and are located along Rocket Production Road, southwest of its intersection with Farley Avenue. Since 1986, Building 1400 has been used to store new equipment for the RDX fine grind facility. Explosives-contaminated wastewater generated at Building 1400 was collected by concrete troughs, which discharged to a catch basin located on the north side of the building that subsequently discharged to the woods north of Building 1400, and the ground near the northwest and southeast corners of Building 1400. Since 1986, Building 1402 has been used to store decontaminated propellant processing equipment formerly used in the 1400 Area. Standard operating procedure for propellant processing buildings included periodic washdown of the equipment and flooring to remove residual explosive material. Since no records of troughs or catch basins exist at Building 1402, the washdown water likely flowed out the doors, located on all four sides of the building and discharged directly onto the ground. Building 1403 was renovated in 1987 for the installation of a twin screw mixer/extruder, as part of a pilot process for the production of LOVA propellants (75% RDX and 25% wax). Two lead-lined concrete catch basins are located on the interior of Building 1403, for the collection of explosives-contaminated wastewater generated from washdown activities, which formerly discharged via a concrete trough to a catch tank, located on the west side of the building. Presently, the catch basins discharge non-energetics and solvents to a 5,000-gallon AST installed, in 1993, prior to being transported to Building 809 for treatment.

Surface soil was analyzed for VOCs, SVOCs, explosives, pesticides/PCBs, metals, and anions as part of the 1996 PA/SI. Explosives, metals, and PAHs were detected at concentrations greater than LOC. Based upon results of the PA/SI, RI activities were conducted from 1998 to 1999 as part of the Phase III-1A RI. Metals were detected in surface water at marginally high concentrations; PAHs and metals were detected in sediment at concentrations marginally greater than LOC; and explosives, metals, and PAHs were detected in soil at concentrations greater than LOC. RDX was detected in one well at a concentration slightly above LOC. HHRA results indicated the risks and hazards are within target levels. Ecological risk will be addressed as part of the Phase III Ecological Risk Assessment to be conducted in conjunction with Phase III-2A/3A sites.

In 2003, PICA-021, 168, 169, 172 and 174 were listed as response complete in AEDB-R and will be addressed under PICA-163.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS OF CONCERN:
Explosives, Metals, PAHs
MEDIA OF CONCERN:
Sediment, Soil, Surface Water
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Part of PICA-163 = PICA-169, Site 169 Propellant Plants, Bldgs 1408, 1408A-C, 1409, 1411

SITE DESCRIPTION

Site 169 consists of Buildings 1408, 1408-A, B, C, 1409, and 1411. Four of the six buildings performed propellant processing operations, while the remaining two served as storage buildings for propellant operations conducted in the 1400 Area.

Bldg 1408 has three mixing rooms, that have been used to mix propellants since its construction and is still used periodically for mixing. In 1982, two catch tanks were installed for the collection of explosives-contaminated washdown water, which was previously discharged to the ground outside the room. Bldg 1408-A and B are used as shipping, receiving, and storage buildings for propellant operations. Bldg 1408-B is currently used to store and weigh flammable solvents used in propellant manufacturing. Bldg 1408-C has lead-covered concrete floors, and has been used since its construction for propellant glazing. Bldg 1409 was used as a propellant extrusion press building until around 1987, when renovations began for the installation of a RDX fine grind operation. However, an extensive fire in April 1989 resulted in the RDX fine grind operation being moved to Bldgs 1461 and 1462. Bldg 1409 has since been demolished. Five lead-lined catch basins were located at Bldg 1409 for the collection of explosives-contaminated wastewater, generated from washdown activities. Bldg 1411 has been used for the extrusion and cutting of solvent-based propellants, since its construction. The wastewater from washdown of equipment and floors, following propellant extrusion and cutting operations, was historically discharged to a catch tank located on the west side of Bldg 1411 near the southwest corner.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS OF CONCERN:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

One soil and two sludge samples from tanks were collected at Building 1408, as part of the 1992 Foster Wheeler Water Discharge Investigation, for VOC, SVOC, TCLP metals, and explosives. No contaminants were detected above LOC, however, nitrocellulose, for which no LOC is available, was detected in the 2 sludge samples at elevated concentrations. A PA/SI was conducted in 1996 for the analysis of soil for VOCs, SVOCs, pesticides/PCBs, metals, and anions. Lead was detected in soil at concentrations in excess of the LOC during the PA/SI. Based upon results of the PA/SI, Site 169 was included as part of the Phase III 2A/3A RI. Sampling activities are currently ongoing for the analysis of soil, surface water, sediment, and groundwater for VOCs, SVOCs, perchlorate, explosives, and metals. To date, lead has been detected at concentrations above LOC in surface soil, metals and RDX have been detected in surface water and sediment above LOCs, and RDX has been detected in groundwater at concentrations greater than LOC. Nitrocellulose, which does not have a LOC, was also detected at elevated levels in the soil. Sampling performed in 2000 has delineated the extent of the soil, surface water and sediment contamination; no further sampling is proposed. Groundwater contamination is being addressed on an area-wide basis as part of the Mid-Valley Investigation. Results of a HHRA indicate the risks and hazards from soil exposure at the site are below the target levels of 1E-4 and 1, respectivly. Ecological risk will be addressed as part of the Phase III Ecological Risk Assessment.

In 2003, PICA-021, 168, 169, 172 and 174 were listed as response complete in AEDB-R and will be addressed under PICA-163.

Part of PICA-163 = PICA-172, Site 161
Former Nitration Bldg 1031

SITE DESCRIPTION

Building 1031 is a five-story building, located off of Upper X.H.E. Road. Building 1031 was originally constructed in 1952 for manufacturing RDX and HMX; however, other explosives including PETN, DATNB, DNT, TNT, BTTN, and NQ were also manufactured. The building has been shut down since the early 1980s, and is currently scheduled for demolition. Building 1031 primarily served as a research and development facility for pilot-scale explosives manufacturing operations. Two aboveground sumps are located northeast of Building 1031, adjacent to the covered walkway leading to Building 1033. One sump received explosives-contaminated wastewater from washdown operations, while the second sump received process wastewater. The wastewater from both sumps was treated with caustic material to reduce the pH prior to its release into a wastewater trough, that connected to the Building 1033 trough system.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS OF CONCERN:
Lead, TCE
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

PTA personnel indicated that one spill had occurred at Building 1031. Acetic acid from a drown tank overflowed the reaction tank and spilled inside the building. All of the floors were flushed with water, both the acetic acid and the water discharged through the floor drains in the building to the process wastewater sump, where the waste was neutralized and discharged from the sump to the Building 1033 trough system.

A PA/SI was conducted in 1996 for the analysis of surface soil for VOCs, SVOCs, pesticides/PCBs, explosives, metals, and anions. VOCs, metals, and explosives were detected at concentrations greater than LOC. Based upon results of the PA/SI, Site 161 was included as part of the Phase III-1A RI in which surface soil, subsurface soil, surface water, sediment, and groundwater were analyzed for VOCs, explosives, and metals from 1998 to 1999. Lead was delineated in soil at concentrations in excess of LOC in the vicinity of lead lined troughs leading to Building 1033, and TCE is present in groundwater at concentrations in excess of LOC. TCE contamination in groundwater is being addressed on an area-wide basis as part of the Mid-Valley Groundwater Investigation. HHRA results indicate risks and hazard are with in the target levels. The adult lead model indicates lead in surface soil may be a concern for the industrila research worker. Ecological risk will be evaluated as part of the Phase III Ecological Risk Assessment to be conducted in conjunction with the Phase III-2A/3A sites.

In 2003, PICA-021, 168, 169, 172 and 174 were listed as response complete in AEDB-R and will be addressed under PICA-163.

Part of PICA-163 = PICA-174, Site 166
Former Propellant Plants Bldgs 1354,1357,1359

SITE DESCRIPTION

Site 166 consists of Buildings 1354, 1357, and 1359. The buildings are located north of N.G. Road and south of Upper X.H.E. Road. The buildings were used, from the time of their construction until the mid-1960s, to air-dry NC-NG paste, produced in the NG production area (1300 Area), for use in solventless propellant manufacture. From the mid-1960s until sometime in the mid to late 1970s, these three buildings were used as dry houses for double-base and triple-base propellants. Since the 1970s, these three buildings have been used as explosives storage magazines, in support of operations conducted in the 1300 and 1400 areas. Each building has a sand-filled catch box, located along a stream, west of the buildings connected to wastewater troughs present at all three buildings. The catch boxes received wastewater from washdown activities conducted at the buildings. As propellant and explosives dry houses and storage magazines, the following materials have been located at Buildings 1354, 1357, and 1359: RDX, HMX, NQ, NG, NC, liquid propellant, TMETN, DEGDN, triethylene glycol dinitrate (TEGDN), DANPE, nitromethane, liquid nitrate esters, and liquid nitramines. These buildings are scheduled for demolition in 2003.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

In 1987, interior wall paint chip samples from Bldg 1357 were analyzed for nitroglycerin. No nitroglycerin was detectable in the samples collected. A PA/SI was conducted in 1996. Arsenic was detected in soil, at concentrations greater than the LOC, during PA/SI activities. Based upon results of the PA/SI, Site 166 was included as part of the Phase III 2A/3A RI for the analysis of surface soil for arsenic. Arsenic was not detected at levels greater than LOC during RI sampling activities. No further sampling is proposed. Results of a HHRA indicate the risk and hazard from soil exposure at the site are below the target levels of 1E-4 and 1, respectively. Ecological risk will be addressed as part of the Phase III Ecological Risk Assessment.

The catch box at Building 1357 will be excavated and disposed of off-site (funded FY03).

In 2003, PICA-021, 168, 169, 172 and 174 were listed as response complete in AEDB-R and will be addressed under PICA-163.

PICA-171, Site 171
Ordnance Bldg/Explosives Prod

SITE DESCRIPTION

Site 171 consists of Buildings 3106, 3109 and 3111. All three buildings were used as magazines while under naval ownership. Currently, the buildings are used for physical and environmental testing of ordnance items.

Bldg 3106 was used to store magnesium powder, oxidizers, explosives, and rocket fuels. Bldg 3106 was modified for use as an environmental test facility in 1964-65, and is still used to evaluate packaging materials and ammunition components such as fuzes. Three dry wells are located on the north side of Bldg 3106. Bldg 3109 was constructed by the Navy in 1943 as a magazine, and renovated in 1960 for use as an environmental testing facility. A 100ft tall drop tower (Bldg 3145) is located northeast of the building, and is used to test durability and performance of packaging materials, unloaded ordnance components, and similar materials. Two dry wells were associated with Bldg 3109, which only received steam condensate. The Navy constructed Bldg 3111 in 1943 for use as a smokeless powder storage building. In the early 1960s, the building was converted for use as an air gun facility, and has served that purpose since that time. Bldg 3111 also houses a "dynamic machine," which was designed to simulate the forces inflicted on a shell upon conventional firing. A TPH contaminated soil removal was conducted in the early 1990s, in an area of an old oil vapor containment drum, at Bldg 3111.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS OF CONCERN:
Metals, PAHs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
RD, RA, LTM

A PA/SI was conducted in 1996. Metals and PAHs were detected in soil at concentrations exceeding the LOC. Based upon results of the PA/SI, Site 171 was included as part of the Phase III 2A/3A RI, currently in progress for the analysis of surface soil, subsurface soil, and groundwater for VOCs, SVOCs, explosives, PCBs, metals, and perchlorate. To date, metals, PCBs and PAHs have been detected at concentrations greater than LOC in surface soil, and TCE was detected in groundwater at concentrations greater than LOC. Sampling performed in 2000 and 2001 has characterized the potential sources and delineated the extent of the soil contamination. Results of a HHRA indicate the risks and hazards from soil exposure are below the target levels of 1E-4 and 1, respectively. However, lead in the soil is a potential concern. Ecological risk will be addressed as part of the Phase III Ecological Risk Assessment.

Groundwater contamination is being addressed on an area-wide basis as part of the Mid-Valley Investigation.

Lead contaminated soil is expected to be removed in FY04.

In 2003, PICA-173 was listed as response complete in AEDB-R and will be addressed under PICA-171.

PROPOSED PLAN

A FS to include a PP and ROD will be completed. Institutional and enginerring controls are recommended following removal of lead-containmated soil.

Part of PICA-171 = PICA-173, Site 162
Former Explosive Maint/Storage Bldgs 1070, 1071, 1071C

SITE DESCRIPTION

Site 162 consists of three buildings formerly used in the production of high explosives, located off 19th Avenue, north of its intersection with 12th Street. Bldg 1070 consisted of four tanks of varying size, that were used to store spent acid from tetryl production. Materials associated with Bldg 1070 were spent acids (most probably nitric acid) from tetryl production. Bldg 1071 is a three-story structure, constructed in 1942 as a crystallizing building for tetryl production. The building also housed Haleite production; tetryl and TNT recrystallizing processes; a NQ precipitation process; and most recently, slurrying, wax coating, and drying of RDX. Operations at Bldg 1071 ceased in the mid-1980s. Bldg 1071-C, constructed in 1943, stored solvent for use in production operations in Bldg 1071. Bldg 1071-C was listed on 1986 and 1987 demolition lists, and was permitted for flashing by the NJDEP in an April 6, 1987 permit. Materials stored in Bldg 1071-C were acetone and alcohol. After a 1988 inspection, Bldg 1071-C was listed as exempt from RCRA regulations, because no hazardous waste was stored or generated at the building. Demolition activities are currently underway at these buildings

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS OF CONCERN:
Metals, PAHs, Explosives
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

A PA/SI was conducted in 1996. Metals, PAHs, and explosives were detected in soil at concentrations greater than the respective LOCs. RDX has been detected at concentrations greater than LOC in surface soil, and an isolated detection of arsenic in soil marginally above LOC was found. Soil sampling performed in 2001 has delineated the horizontal extent of explosives contamination in soil. The vertical extent will be evaluated based on impact to groundwater, which is currently being addressed on an area-wide basis as part of the Mid-Valley GW RI. Results of a HHRA indicate the risks from soil exposure are below the target level of 1E-4. The hazards from soil exposure are equal to or below the target level of 1. Ecological risk will be addressed as part of the Phase III Ecological Risk Assessment.

In 2003, PICA-173 was listed as response complete in AEDB-R and will be addressed under PICA-171.

PICA-175, Site 115
Ordnance Bldgs in 600 Area

SITE DESCRIPTION

Building 611, constructed in 1965, has been used for the testing of small munitions since its construction. According to an undated transformer inventory, there are three 75-KVA transformers located inside the building. The transformers are considered to be PCB transformers. According to the PTA transformer database compiled in 1988, the transformers were in fair condition at that time and contained 34 gallons of dielectric fluid.

Although little information exists regarding the testing practices at the range area, interpretation of historic maps and aerial photographs indicate that guns were placed in the area southwest of Bldg 611, and fired into the slug-butt near Bldg 611-A. The slug-butt is still on the hillside in a deteriorated condition. This range area was used from the late 1920s to the 1940s. Currently, the ground floor of Building 611 is divided into two steel-lined blast chambers and a work area. The southern blast chamber is used only for storage and parking of vehicles, while the northern blast chamber is used to test warheads, fuses, and primers. Building 611 is also equipped with a portable X-ray unit and a darkroom for the development of X-ray films. The darkroom is located on the second floor above the work area at the south end of the building. Building 611 has a RCRA-permitted satellite waste accumulation area located inside the building. Materials stored in the area include used spray paint cans, x-ray developer and fixer.

Dye tests performed in 1991 indicate that all water from Building 611, including the darkroom sink, discharges to the sanitary sewer system (Foster Wheeler, 1991). A PA/SI was conducted in 1996. No contaminants were detected at concentrations greater than LOC. In 2000, RI sampling was performed to characterize the slug butt area and the depleted uranium test area at Building 611B. Elevated levels of metals were reported at the slug-butt; subsequent sampling has delineated the extent of the soil contamination. A monitoring well was installed in 2001, and sampled in 2002 to determine the groundwater quality downgradient of the slug-butt. Analytical results indicate the groundwater has not been impacted by the former testing operations at the site. Results of a HHRA indicate the risks and hazards from soil exposure at the site are below the target levels of 1E-4 and 1, respectively. However, lead in the surface soil is a potential health concern.

In 2003, PICA-133, 178, 179 and 180 were listed as response complete in AEDB-R and will be addressed under PICA-175.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
Metals, Explosives
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS (funded), RD
FUTURE IRP PHASE:
RA, LTM

PROPOSED PLAN

A FS to include a PP and ROD will be completed. Engineering controls are recommended for this site (funded in FY04).

PICA-133, 178, 179 and 180 are considered response complete.

Part of PICA-175 = PICA-133, Site 151 Change House Bldg 600

SITE DESCRIPTION

Building 600 was constructed in 1942 as a change house. Because personnel who used these facilities worked with explosives, wastewater from the washing operations may have been contaminated with explosives. The explosives-contaminated wastewater was discharged to a dry well before Building 600 was connected to the sanitary sewer system sometime in the 1960s. Sometime around 1978, Building 600 was used as a training ground for military training maneuvers. The training maneuvers involved the use of hand grenades, rockets, and other small-scale explosives. In 1992, Building 600 underwent an asbestos abatement and was demolished.

Phase II RI activities at this site included the installation of one monitoring well, and the collection of soil and groundwater samples. During the RI, lead was detected above its LOC in the groundwater sample collected from monitoring well 151MW-1. Results of a HHRA for soil exposure at the site indicated that the risks and hazard indices are below the respective target levels of 1×10^{-4} and 1. No further action is proposed for the soil at this site.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
Lead, RDX
MEDIA OF CONCERN:
Groundwater
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

An additional monitoring well was installed, and additional groundwater samples collected as part of continued RI activities in 2000. Elevated lead levels continue to be detected at monitoring well 151MW-1. RDX was detected in the new well at a concentration marginally above the LOC.

In 2003, PICA-133, 178, 179 and 180 were listed as response complete in AEDB-R and will be addressed under PICA-175.

Part of PICA-175 = PICA-178, Site 152 Ordnance Facility, Bldgs 604,604c

SITE DESCRIPTION

Site 152, Building 604(ordnance physical testing facility) and Building 604-C (ammunition teardown facility) is located off of 20th Avenue, northeast of its intersection with Tenth Street. Building 604 was originally constructed (1928) as a fragmentation tub house, and converted to a physical testing facility in 1943. The building is currently used as a physical testing/inert storage facility. Materials used in the building include hydraulic fluid, mines, grenades, projectiles, fuzes, calcium carbide, propellants, and small arms ammunition. The area, south of Building 604, was used for the firing of hand grenade fuzes. There is no storage of energetic materials in the building at this time. Building 604-C was constructed in 1928 as an ammunition teardown facility. In 1942, an addition, to the west end of the building, was made to house a saw room and a control room for sectioning operations. In 1958, a milling machine room was added, bringing Building 604-C to its present size. The building has been used for the same purpose since its construction. Two underground storage tanks (T1 and T2) were formerly located on the south side of Building 604-C. The tanks were installed in late 1979, and were first used for the collection of red water from the sectioning saw in April 1980. Weston removed these tanks in Spring 1991. Currently, the red water is discharged through a pipe into a plastic aboveground tank, inside a hazardous materials cabinet.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS OF CONCERN:
Explosives, Radiologicals (beta emissions)
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Soil samples were collected from the bottom of the excavation, in the area of the former tanks during the removal action in 1991, and analyzed for VOCs, BNAs, metals, and nitrites. No contaminants were detected at concentrations above LOC, and PTA wrote a Closure Certification Letter in December 1991. A PA/SI was conducted in 1996 to evaluate VOCs, SVOCs, pesticides/PCBs, explosives, metals and anions in surface soil. Explosives were detected at concentrations in excess of LOC, and the site was included as part of the Phase III 2A/3A RI for the analysis of explosives in surface soil. No explosives were detected in soil at concentrations greater than LOC during the Phase III 2A/3A investigation. Since no chemical concentrations exceeded the screening criteria, risks and hazards were not quantified for this site. Ecological risk will be addressed as part of the Phase III Ecological Risk Assessment.

In 2003, PICA-133, 178, 179 and 180 were listed as response complete in AEDB-R and will be addressed under PICA-175.

Part of PICA-175 = PICA-179, Site 153
Ordnance Facility Bldg 606

SITE DESCRIPTION

Building 606 was constructed in 1960 as an electronics lab and explosive testing support facility. The building's use has remained essentially unchanged since the time of its construction. Current activities are limited to electronics development, small indoor tests on ordnance components, storage of electronic equipment, and administrative activities. The building is also equipped with a dark room for the development of X-ray films. Materials presently used in the building include freon, compressed gasses, X-ray developer, and X-ray fixer. Building 606 has a RCRA-permitted satellite waste accumulation area. Hazardous waste generated in the building is limited to X-ray developer, in quantities of 30 gallons per year, and rinse water in quantities of 150 gallons per year, generated in a darkroom on the building's west side. Prior to the late 1980s, the rinse water from the X-ray developing process was rinsed down a sink, which discharges directly onto the ground on the building's west side. According to the 1991 ANL RI Concept Plan, waste generated during the development of X-ray film (5 gallons per month of both fixer and developer) was stored outside of the building. According to a DEH engineering drawing (DP-143692), Building 606 is equipped with two underground water storage tanks. The tanks were used for the storage of water that was trucked in until 1966, when the building was connected to water service by a line from Building 611. The water storage tanks (which hold 500 and 800 gallons) are located on the northeast side of the building.

A UXO clearance was performed in 1992 on the north and west sides of the building for the purpose of installing surface water drainage swales. No UXO was found as a result of the survey. A PA/SI was conducted in 1996 to evaluate VOCs, SVOCs, pesticides/PCBs, explosives, metals and anions in surface soil. No contaminants were detected at concentrations greater than LOC.

In 2003, PICA-133, 178, 179 and 180 were listed as response complete in AEDB-R and will be addressed under PICA-175.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
None
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Part of PICA-175 = PICA-180, Site 154 Field Off, Disassembly, Bldgs 617, 617G

SITE DESCRIPTION

Site 154 consists of Buildings 617, an administration building, and Building 617-G, a disassembly facility and machine shop. Building 617 was constructed in 1928, and was originally designed as a gun building that shot into the slug-butt behind Building 611. The building was also used as an ammunition assembly house for the gun test range (Building 611). As an ammunition assembly house, activities at Building 617 included shell cleaning, storage, offices, assembly, and photography until the late 1950s. In the 1960s, Building 617 was equipped with a temperature-conditioning oven for the short-term conditioning of projectiles. It was used as an environmental test facility which ceased in the 1970s. The building is presently used as an office. The building is equipped with a septic tank and cesspool, located on the east side that is still in use.

Building 617-G was constructed in 1928 as a gun and powder shed for storage of howitzers, used in a nearby range and powder for the howitzers until the late 1950s. Since the 1950s, the building has principally been used as an ordnance machine shop. Operations carried out in the building include machining, grinding, painting, assembly, calibration, and testing. Currently, the machine shop is not used for the machining of loaded ordnance. Materials used in the building include fuzes, grenades, mines, and projectiles; as well as trichloroethane, for the cleaning of parts. Building 617-G is equipped with a RCRA-permitted satellite waste accumulation area, in which small quantities of aerosol paint cans, oil, and oily rags are stored. According to a radiation survey, Building 617-G was used for disassembling DU containing projectiles. No measurable contamination was present after disassembly.

According to a radiological survey conducted at Buildings 617 and 617-G, DU penetrators were stored in Building 617 in 1982, and Building 617-G was used in 1978 for the disassembly of projectiles equipped with DU cones. Results of the surveys indicated the penetrators were stored safely and no measurable contamination was present after disassembly. A PA/SI was conducted in 1996 at Buildings 617 and 617-G for VOC, SVOC, pesticides/PCBs, explosives, metals and anions analysis of surface soil. No contaminants were detected at concentrations greater than LOC. The Army currently recommends NFA for this site; however, NJDEP commented that additional sampling is required to investigate the septic system. Because the septic system and building are still in use, investigation of the septic system is not eligible with DERA funding. Thus, no additional sampling is planned.

In 2003, PICA-133, 178, 179 and 180 were listed as response complete in AEDB-R and will be addressed under PICA-175.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

PICA-184, Site 94
Bldgs 1600,1601,1609,1610

SITE DESCRIPTION

Site 94 consists of Bldgs 1609 North, Bldg 1909 South, and 1610 and former Bldgs 1600, 1601, 1604. Bldg 1604 was demolished in 2001. Bldgs 1600 and 1601 are scheduled for demolition in 2004.

Bldg 1600 was used for explosives testing since its construction in 1949 as a test chamber. Until 2001, Bldg 1600 was being used for physical testing of high explosives.

Bldg 1601 was once used for explosives testing, but was used as a photographic laboratory since the 1970s. A small pit/sump existed at the northeast corner of the building that was ~2 x 2 x 2 ft.

Bldg 1604 was built in 1942 as a flare and pyrotechnics assembly plant and was listed as an ordnance facility in 1977. However, an extension to the north added a plating facility in 1949. Bldg 1604 was inactive except for several rooms that are used for storage in recent years.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS OF CONCERN:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS, LTM
FUTURE IRP PHASE:
LTM

Bldg 1609 South was constructed in 1942 as a machine shop, while Bldg 1609 North was constructed in 1951 as a physics laboratory. From1962 until the present, Bldg 1609 has been used as a powder metallurgy laboratory. PTA personnel also indicated that from approximately 1970 to the mid-1980s, Bldg 1609 made tungsten cubes for use in the warhead of the Patriot missile.

Bldg 1610 was constructed in 1942 as a change house and office building for workers in the 1600 Area. Change house operations were discontinued at Bldg 1610 around 1973. The entire building has been used as an office building for various government and private agencies.

A PA/SI was conducted in 1996. Metals were detected in soil at concentrations greater than LOC. A soil gas survey, as well as surface soil, subsurface soil, surface water, sediment, and groundwater sampling for VOCs, explosives, and metals was conducted from 1998 to 1999. Metals were detected in soil at concentrations greater than LOC. HHRA results indicate risks and hazard are within the target levels. Ecological risk will be addressed as part of the Phase III Ecological Risk Assessment upon completion of the Phase III-2A/3A RI.

PROPOSED PLAN

A FS to include a PP and ROD will be completed. Institutional and engineering controls are planned.

PICA-193 & 194, Site 190
Green Pond & Bear Swamp Brook Site

SITE DESCRIPTION

The Green Pond Brook Study area begins at the outfall of Picatinny Lake and extends to the southern installation boundary. The Bear Swamp Brook Study area begins on Green Pond Mountain and extends until BSBs confluence with GPB. These two brooks are the main drainage way for the watershed on the southern portion of Picatinny. These two brooks flowed past several industrial areas that previously had surface water discharges.

There have been numerous investigations of GPB/BSB since 1983. Investigations were carried out by USGS (1988, 1990, and 1991), Metcalf and Eddy (1991), USAEHA (1991), and Dames and Moore (1989). These investigations cumulatively collected over 100 surface water and sediment samples. The site underwent an RI in 1994 and 34 additional surface water/sediment samples were collected and analyzed for VOCs, BNAs, metals, cyanide, explosives, pesticides, PCBs, and TPH. A subset of these samples was analyzed for dioxins and radionuclides. The HHRA calculated a risk of $8x10^{-6}$ for trespasser swimmers (PCBs), and dioxins/furans), $2x10^{-4}$ for fish consumers (arsenic and PCBs). The ERA determined that there did not appear to be any grossly evident contaminant related impacts, but the contaminant food chain model suggests a potential for impacts.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
Metals, PCBs, Pesticides, PAHs
MEDIA OF CONCERN:
Sediment, Surface Water
COMPLETED IRP PHASE:
PA/SI, RI/FS
CURRENT IRP PHASE:
RD (funded), RA, LTM
FUTURE IRP PHASE:
LTM

In 1999, a feasibility study data gap investigation took place and an additional 13 surface water/sediment samples and 42 sediment samples were collected and analyzed for VOCs, SVOCs, pesticides, PCBs, explosives, metals, anions, and radiologicals with a smaller number of samples analyzed for dioxins. There were exceedances of VOCs, SVOCs, pesticides, PCBs, explosives, anions, and metals criteria in surface water, and VOCs, SVOCs, pesticides, PCBs, and metals criteria in sediment. Potential effect levels were calculated and based upon the number and severity of the effect level exceedances AOCs were identified and an FS was performed. The areas of concern in three regions are: Region 2 - Site 52, 95, and 96 impacted with SVOCs, PCBs, and pesticides; Site 101 with copper; Region 3 - Area H containing mercury and pesticides and Area D basins containing metals, SVOCs, pesticides and PCBs; and Region 4 – containing copper. The FS recommends chemical and biological monitoring for Regions 2 and 4, and excavation and off-site disposal for Region 3. The FS has been approved by the regulators. A Proposed Plan was submitted in Nov 2001.

PICA-194 has been combined with PICA-193, Bear Swamp Brook, and both are being addressed concurrently under PICA-193. Thus, PICA-194 is considered response complete.

Remediation of the sediment basins (as an IRA) will be completed in late 2003.

PROPOSED PLAN

AOCs in Region 3 will be dredged and the remaining AOCs in Regions 2 and 4 will be chemically and biologically monitored. The remaining AOCs in Region 3 will be excavated subsequent to the sedimentation basins. Remedial activities at the other areas of concern will be performed after the ROD is signed.

PICA-195, Site 77
Bldgs in 1400/1300/3100/1000 Areas

SITE DESCRIPTION

Building 3150 is on the southeastern PTA boundary. Building 3150 was constructed in 1942 as a storage building. Currently it houses a precision machine shop (85,592 ft2) and a gymnasium (8,285 ft^2). The metal fabrication machine shop, which also has a waste storage area, is at the north corner of the basement of the building.

A document review has been completed for this site to investigate the potential for impact to groundwater from the site. The document review indicated materials handled in the building included lubricating oils, metal cuttings and degreasers. This site is adjacent to Site 5 (Shell Burial Area). Chlorinated solvent contamination has been detected at Site 5, and Site 77 could be a potential upgradient source. No remedial investigation has taken place at the building.

In 2003, PICA-037, 080, 081, 082, 164, 165, 166, 167 and 170 were listed as response completed in AEDB-R and will be addressed under PICA-195.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
PCBs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
RI/FS, RD, RA, LTM

PROPOSED PLAN

The waste hadling practices at PICA-195 will be documented.

Soil removal is expected at PICA-165.

PICA-037, 080, 081, 082, 164, 166, 167, 170 and 195 are considered response complete.

Part of PICA-195 = PICA-037, Site 51
Former Hazardous Waste Tank Storage (Bldg 1380)

SITE DESCRIPTION

Building 1380 is located on the north side of South N.G. Road. Two ASTs were located approximately 50 ft west of Building 1380. The tanks were used to store a 60/40 percent mixture of nitric and sulfuric acids, for use in the production of NG at Building 1362. The mixed acids were fed to Building 1362 via a 1-inch overhead stainless steel product transfer line. The installation date of the tanks is unknown, but Building 1380 was constructed in 1949. No information was available on the actual date when use of the tanks was terminated, but a 1987 PTA Final Safety Site Plan indicated that Building 1380 was inactive.

The two mixed acid storage tanks were removed in 1992, as part of a RCRA closure performed by Weston. Three 75-KVA pad-mounted transformers (TR-1380) are located east of Building 1380. According to the PTA transformer database, two of the transformers were not PCB-contaminated, while the third had a total PCB concentration of 140ppm.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
PCBs, SVOCs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Explosives, VOCs, SVOCs, pesticides/PCBs, anions, and metals analysis of soil were conducted as part of the 1996 PA/SI. No detections were identified at concentrations greater than LOC. Due to the low amount of contamination present in the SI samples collected, no RI/FS work will be conducted at this site.

In 2003, PICA-037, 080, 081, 082, 164, 165, 166, 167 and 170 were listed as response completed in AEDB-R and will be addressed under PICA-195.

Part of PICA-195 = PICA-080, Site 41
Former Lab Pack Fac (B-1094)

SITE DESCRIPTION

Building 1094 was constructed in 1942 as a screening and pulverizing building for nitroguanidine (NQ), and is located west of the intersection of 17th Avenue and Main Road. In 1981, the building was renovated to store solid and liquid flammable waste. Building 1094 operated as one of three RCRA-permitted hazardous waste storage facilities at Picatinny Arsenal until 2000, when it was converted to a hazardous waste supply building. Materials used, prior to the building renovation in 1981, were acid (SO_2), NQ, and Haleite (ethylenedinitramine). Two spent acid USTs, set in concrete, were formerly located between Buildings 1094 and 1052. A 500-gallon stainless steel UST was installed during 1981 renovations. The tank is encased in a concrete basin, underground, 30-ft from the southwest side of the building. The tank was connected to floor drains in Building 1094 and a 130 ft^2 attached shed. The UST was reportedly taken out of service in 1990. Two dry wells are reported to have been in use at Building 1094; one was connected to the floor drain in the center of bldg and a second dry well received steam condensate. Neither dry well was located during the ICF KE site inspection in March 1996. A 4 x 3 x 3ft area of stained soil was identified at Building 1094 during a site inspection in December 1992, attributed to the storage and leakage of equipment containing non-hazardous lubricating oil. The PTA waste-handling contractor removed, containerized, and disposed of the contaminated soil.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
PAHs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

A PA/SI was conducted in 1996, including the collection of soil samples for the analysis of VOCs, SVOCs, pesticides/PCBs, metals, explosives, and anions. PAHs were detected in surface soil at concentrations greater than levels of concern. Based upon results of the PA/SI, RI activities were initiated in Fall 2000 as part of the Phase III 2A/3A RI. RI activities included soil sampling for PAH contamination detected in PA/SI samples and geophysical surveys to locate the former dry wells. No chemicals were detected at concentrations greater than levels of concern. Based upon results of the geophysical surveys, the dry wells could not be identified, but subsurface soil samples were collected at two anomalies to investigate potential contamination from former USTs. Lead was detected at a concentration slightly above the LOC. No further sampling is proposed. A human health risk assessment is currently being prepared for this site. Results of a HHRA indicate the risk and hazard from soil exposure at the site are below the target levels of 1E-4 and 1, respectively. However, lead in the subsurface soil is a potential concern. Ecological risk will be evaluated as part of the Phase III Ecological Risk Assessment to be conducted upon completion of the Phase III-1A and Phase III-2A/3A Remedial Investigations.

In 2003, PICA-037, 080, 081, 082, 164, 165, 166, 167 and 170 were listed as response completed in AEDB-R and will be addressed under PICA-195.

Part of PICA-195 = PICA-081, Site 42
Former PCB Storage Area (B-3114)

SITE DESCRIPTION

Building 3114 is located at the intersection of South Woods Road and East Tower Road. The building was constructed in 1934 by the Navy, as a flammable materials storage facility, on the remnants of the foundation of a storage magazine, which was demolished by the 1926 Lake Denmark disaster. Building 3114 has been used as a storage facility since the time of its construction. Although, little documentation exists from the time of Naval ownership, it is believed that Building 3114 was historically used for the storage of nitrocellulose (NC) and solvents. Building 3114 has been used for the storage of used electrical equipment since the early 1980s, including pieces of PCB-contaminated equipment. Building 3114 was utilized as one of the RCRA-permitted storage facilities at PTA until 2000. According to a 1981 PTA memorandum, storage of PCB-contaminated electrical equipment, on the northeast side of the building, was permitted until 1983. After this time, all storage took place inside the building.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
PCBs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

A wastewater discharge investigation was conducted in 1991, including the collection of storm water and soil samples. No significant detections were present in samples collected, except one sample containing Aroclor 1254, at a concentration approaching levels of concern. A PA/SI was conducted at this site in 1996. Included as part of the PA/SI was analysis of soil samples for VOCs, SVOCs, pesticides/PCBs, metals, explosives, and anions. No compounds were detected above levels of concern. Due to the low amount of contamination present in the SI samples collected, no RI/FS work will be conducted at this site.

In 2003, PICA-037, 080, 081, 082, 164, 165, 166, 167 and 170 were listed as response completed in AEDB-R and will be addressed under PICA-195.

Part of PICA-195 = PICA-082, Site 43
Pesticide Storage Area (B-3157)

SITE DESCRIPTION

Building 3157 was built in 1896 as a pump house for the U.S. Naval Ammunition Depot, and is located at the intersection of Schrader Road and Jenkins Road. The building was subsequently converted to a general storehouse, and in the early to mid 1970s, was converted to the pesticide storage and mixing facility. In 1991, Building 3157 underwent a RCRA closure, and in 1994 a secondary containment area, located immediately adjacent to the east side of the building, was constructed to adhere to best management practices for spill containment.

Two outside storage areas are located east of the building. One was used to store a pesticide application truck, while the other was formerly used to store gasoline for the truck. A RCRA satellite hazardous waste storage area is located in the mixing room for pesticide rinsate from mixing and equipment cleaning operations, and pesticide/herbicide residue. Since 1980, no spills have been reported as a result of pesticide activities at Building 3157. The floor drain in the mixing room formerly discharged to a dry well, under the current bathroom added in the early 1990s. This drain also handled the regularly utilized shower in the building. The floor drain in the mixing room is currently sealed to prevent releases from spills during mixing. A floor drain, now covered with concrete, was also located in the large storage room. The discharge point of this drain is not known. Building 3157 is still utilized for pesticide storage.

RI activities were conducted at Building 3157 in 1998. Included as part of RI activities were geophysical surveys and soil sampling for VOCs, SVOCs, pesticides, and cyanide. The location of the dry well could not be ascertained via geophysical surveys and no exceedences of levels of concern were detected in soil samples. No COPS were selected during HHRAs for realistic exposure scenarios. The estimated risk and hazards were assumed to be below the target risk of 1E-4 and target non-cancer hazard threshold of 1.

In 2003, PICA-037, 080, 081, 082, 164, 165, 166, 167 and 170 were listed as response completed in AEDB-R and will be addressed under PICA-195.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS OF CONCERN:
Pesticides, Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Part of PICA-195 = PICA-164, Site 103 Reservoir Near Bldg 3159

SITE DESCRIPTION

The 16,000,000-gallon reservoir (EOD pond), located near Building 3159, was constructed some time between 1951 and 1953. Prior to its construction, the reservoir was an undeveloped marsh area. The reservoir is encased by a berm, ranging from one to at least ten feet in height, and the maximum depth of the reservoir is seven ft. The reservoir has one inlet, from a stream on the southeast side, and one formal outlet to a culvert on the north side, that is controlled by an overflow valve. The reservoir also has a second, overflow outlet located on the east side.

Buildings 3137, 3155, 3157, and 3159, along with several foundations remaining from the 1926 Lake Denmark explosion surround the reservoir. No spills have been documented from the four surrounding buildings into the reservoir. Materials associated with the area surrounding the reservoir may include pesticides (variety), flammable materials (unknown), PCBs, and possible ordnance.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS OF CONCERN:
Metals
MEDIA OF CONCERN:
Sediment
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

A USAEHA investigation was conducted at the reservoir in 1984, and at nearby Building 3157 in 1988. Elevated levels of chromium and copper were detected in sediment from the reservoir, and mirex was detected in one surface soil sample collected near Building 3157. As part of the 1996 PA/SI, surface soil, surface water, and sediment were analyzed for VOCs, SVOCs, pesticides/PCBs, metals, and anions. Metals were detected in surface soil and surface water at concentrations greater than levels of concern. Based upon results of the PA/SI and USAEHA investigations, RI activities were conducted between 1998 and 2000. Activities conducted as part of the RI included geophysical surveys and surface water/sediment sampling for VOCs, pesticides/ PCBs, explosives, and metals. The geophysical survey suggested the presence of several areas likely to possess ferrous objects. However, results of the surface water and sediment sampling revealed limited number of metals detections in sediment, slightly above levels of concern and no exceedences in surface water. Results of the HHRA indicate risks and hazards are below the target levels for the on-site youth visitor. Ecological risk will be evaluated as part of the Phase III Ecological Risk Assessment to be conducted in conjunction with Phase III-2A/3A sites.

In 2003, PICA-037, 080, 081, 082, 164, 165, 166, 167 and 170 were listed as response completed in AEDB-R and will be addressed under PICA-195.

Part of PICA-195 = PICA-165, Site 114
Explosives Loading, Bldg 1033

SITE DESCRIPTION

Building 1033, constructed in 1952, is located at the intersection of Upper X.H.E. Road and 12th Street, and was used as a melt-pour building until the early 1980's. Bldg 1033 is currently inactive and demolition activities are currently in progress. Chemicals and materials used in Bldg 1033 included: TNT, Amatex, Composition B, octol, acetone, possibly CTC, Lock-tite (adhesive), cycloctol, varsol, and "visatol". Materials loaded were 105-mm shells, 155-mm shells, 8-inch shells, M456 shells, and BLU 92 hand grenades. A settling tank was formerly located beneath the northern addition of Bldg 1033, that received explosives-contaminated process and washdown water from Bldgs 1033, 1071, and 1031, via an open trough system, as well as explosives-contaminated wastewater from Bldg 1033-A. The tank was replaced in 1967 with a tank located on the west side of the building when the northern addition was constructed. Final discharge of the wastewater was to Bldg 1036 or Robinson Run. Bldg 1033 was a permitted discharge source under a NPDES permit from 1975 until 1980. The permit was for the discharge of treated scrubber water from the assembly of explosive devices in Bldg 1033.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
Metals, Explosives
MEDIA OF CONCERN:
Soil, Sediment, Surface Water
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

In 1993, an ARDEC investigation, of an open underground settling tanked, indicated no TCLP metals above reportable limits. A PA/SI was conducted in 1996. RDX and copper were detected at concentrations greater than LOC. HMX, for which no LOC exists, was also detected at elevated levels. Sampling activities are currently ongoing for the analysis of soil, surface water, and sediment for VOCs, SVOCs, PCBs, explosives, and metals. To date, RDX has been detected at concentrations above LOC in surface soil, arsenic has been detected in sediment above LOC, and TCE has been detected in surface water at concentrations greater than LOC. The extent of the soil and surface water contamination has been delineated, as a result of the sampling performed in 2000-01. Results of a HHRA indicate the risk and hazard from soil exposure at the site are below the target levels of 1E-4 and 1, respectively. Ecological risk will be addressed as part of the overall Phase III ERA.

Groundwater and surface water contamination are being addressed on an area-wide basis as part of the Mid-Valley Investigation.

In 2003, PICA-037, 080, 081, 082, 164, 165, 166, 167 and 170 were listed as response completed in AEDB-R and will be addressed under PICA-195.

Prt of PICA-195 = PICA-166, Site 160
Former Ordnance Facility Bldg 1029

SITE DESCRIPTION

Building 1029 is located off Upper X.H.E. Road, northwest of its intersection with N.G. Road. Completed in 1974, Building 1029 was intended to house a propellant analytical laboratory, and a control room for TNT production operations in Building 1031. However, a fire in 1979 destroyed the computer control equipment, and the control room area was renovated to expand the lab area. The building operated as a liquid propellant laboratory until 1998, and is currently inactive. The initial lab operations included drying and weighing the explosives generated in Building 1031, such as RDX and HMX. Explosive waste (containing 5% or more explosives) was sent to the PTA Burning Ground for appropriate off-site disposal. Two rooms were designated RCRA satellite hazardous waste accumulation areas, and were active since 1986. The building is connected to a septic tank and leach field, consisting of two underground crushed stone drainage channels and drain tiles.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
Metals, VOCs, Explosives
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

An ARDEC water discharge report indicated the major concern with this building was a sink drain, which discharges directly to the ground and brook via a metal sump. A PA/SI was conducted in 1996, for the analysis of surface soil, for VOCs, SVOCs, pesticides/PCBs, explosives, metals, and anions. The sink drain was sampled as part of this investigation. No compounds were detected at concentrations greater than level of concern (LOC). Based upon regulatory comment, Site 160 was included as part of the Phase III 2A/3A RI for the analysis of subsurface soil for VOCs, explosives, and metals. No contaminants were detected above LOC during the RI. Groundwater contamination is being addressed on an area-wide basis as part of the Mid-Valley Investigation. Since no chemical concentrations exceeded the screening criteria, risk and hazards were not quantified for this site. Ecological risk will be addressed as part of the Phase III Ecological Risk Assessment.

In 2003, PICA-037, 080, 081, 082, 164, 165, 166, 167 and 170 were listed as response completed in AEDB-R and will be addressed under PICA-195.

Part of PICA - 195 = PICA-167, Site 167 Bldg 1373,1374, Former Propellant Plant Ord Fac

SITE DESCRIPTION

Site 167 consists of Buildings 1373 and 1374. Building 1373 was a NG mixing building, while Building 1374 was a propellant blending building. Both buildings are located between South N.G. Road and Upper X.H.E. Road. Building 1373 was constructed in 1948 and used as a NG emulsifier and mixer building until 1981. The building was decontaminated to the 3X condition in 1989. Building 1373 discharged wastewater through four troughs to two sumps, formerly located on the north side of the building. A removal action was conducted at Building 1373 in 1994-1995, which included removing both sumps. During a 1996 site inspection, the NG storage room was sealed from access and the trough system along the Building 1373 northern platform remained.

Building 1374 was constructed in 1948 and used as a propellant processing building for NG- and NC-based propellants until the early- to mid-1970s. Operations consisted of blending NG and NC pastes to obtain uniformity and consistency. A trough system inside Building 1374 was used to capture explosives-contaminated wastewater generated from washdown operations. The trough system discharged to a concrete sump located in the northwestern corner of the building. The sump then discharged to a nearby stream. A drain, in the pit, discharged to an earthen ditch running along the northern side of the building.

Site 167 was included as part of the Phase III-1A Remedial Investigation. Sampling activities conducted included the analysis of soil, surface water, sediment, and groundwater for VOCs, explosives, metals, and anions. Metals were detected at concentrations above LOC in surface soil, sediment, and surface water. HHRA results indicate the risks and hazards are within the target levels. Ecological risk will be addressed as part of the Phase III Ecological Risk Assessment to be conducted in conjunction with Phase III-2A/3A RI sites.

In 2003, PICA-037, 080, 081, 082, 164, 165, 166, 167 and 170 were listed as response completed in AEDB-R and will be addressed under PICA-195.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS OF CONCERN:
Metals
MEDIA OF CONCERN:
Soil, Surface Water, Sediment
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Part of PICA-195 = PICA-170, Site 170 Propellant Melt Plants, Bldgs 1462-1464

SITE DESCRIPTION

Buildings 1462, 1463, and 1464, along with Building 1461, made up a pilot scale propellant melt-pour facility.

Building 1462, constructed in 1974, was used until approximately 1980 as part of a pilot scale melt-pour facility for the melting of propellant. Building 1462 received Composition B (a mixture of RDX and TNT) from Building 1461 via an overhead conveyor, melted the propellant material, and then pumped it to Building 1463 via a 2-inch process line, enclosed in a concrete trough, which ran under Lower Cast Propellant Road. Building 1463, constructed in 1974, received molten Composition B from Building 1462 for loading into projectiles until around 1980. Renovations began in the early 1990s on Buildings 1462 and 1464 for use in conjunction with an explosives waste incinerator, that was to be located at Site 170. Construction of the explosives waste incinerator at Site 170 is currently complete. However, approval of trial burn results are pending. Building 1464, constructed in 1978, was used as the projectile shipping and receiving building from the time of its construction until around 1980. Empty projectiles were received at Building 1464, where they were conveyed through an enclosed walkway to Building 1463 for filling. The loaded projectiles were returned to Building 1464, capped, and placed on pallets for shipment.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

Weston removed a total of nine wastewater tanks (three tanks at each building) in 1993 as part of a RCRA closure. Upon removal of the tanks, 10 soil samples were collected at each building for confirmatory analysis of TAL metals, RDX, and HMX. No explosives were detected, and metals were not detected at concentrations greater than LOC, except for beryllium in one sample at a concentration of 2.1 mg/kg. Based upon the confirmatory sampling results, the NJDEP accepted the RCRA closure in 1994. The PTA EAO collected 11 surface and subsurface soil samples for VOCs, SVOCs, pesticides/PCBs, metals, and explosives between Buildings 1463 and 1464 in 1993. One metal, arsenic, was detected at a concentration marginally above LOC. A PA/SI was conducted in 1996 for soil analysis of VOCs, SVOCs, pesticides/PCBs, explosives, metals, and anions. Cadmium was detected at concentrations slightly above the NJ Residential Soil Clean-up Criteria.

Confirmatory samples will be taken. Institutional controls will be recommended as the remedy for this site.

In 2003, PICA-037, 080, 081, 082, 164, 165, 166, 167 and 170 were listed as response completed in AEDB-R and will be addressed under PICA-195.

PICA-199
Former Pistol Range Dump & Navy Manure Pit

SITE DESCRIPTION

Site 199 consists of an abandoned pistol range and a former dumping area. The pistol range was active from approximately 1936 to 1980. This range was approved for pistol, shot gun, and tear gas rounds. The range is presently in poor condition. Building 3054 and an unnumbered building are the only two structures located at Site 199. Both of these shacks are wooden and presently store debris.

The area to the north of the pistol range was used as a dumping area. The former dumping area is ~1 acre. The former dumping area contains construction and demolition debris, as well as domestic trash. The debris consists of crushed metal drums, car parts (e.g., batteries, engine block), glass, ceramics, terra-cotta pipe, shingles, coal, construction buckets, soda cans, and solidified paint wastes. No information was available regarding the dates in which wastes were placed at the former dumping area. However, the type of trash present at the former dumping area suggests that the site was active from the 1920s to the mid-1930s, with sporadic activity as late as 1970. A 1940 Naval Ammunition Depot map, however, indicated a manure pit occupied the southeastern half of Site 199.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS OF CONCERN:
Metals, PAHs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
RA, LTM

As part of CHPPM'S RRSE, antimony and lead were detected at concentrations greater than their respective LOCs. In order to further characterize the site, soil and groundwater samples were collected at the site in 2000. Elevated lead levels were reported in soil samples collected from the pistol range portion of the site. Elevated levels of arsenic, zinc, and PAHs were detected in the soil samples collected from the former dumping area in association with buried debris. The HHRA indicates that the risk from exposure to impacted site media is above the target risk levels, but below the target hazard level. Lead was also determined to be a health concern at the site. Based on the results of the HHRA, a FS and ERA will be recommended to evaluate remedial atlernatives for the contaminated soil and buried debris.

PROPOSED PLAN

A FS to include a PP and ROD will be completed. Contaminated soil will be removed. Institutional controls are expected.

PICA-200
Other Buildings in Area L

SITE DESCRIPTION

Thirteen additional buildings in Area L are included as part of PICA-200. The following is a brief description of each building. Bldg 1030 was constructed in 1949 as an acid tank farm. Bldg 1037 was constructed in 1957 as a wastewater incinerator. Bldg 1038 was constructed in 1956 as a solvent storage/flammable material storehouse. Bldg 1090 was constructed in 1948 as an assembly and packing building. Bldg 1355 consists of three 4,000 gallon steel ASTs for the storage of spent nitric and sulfuric acid used in the production of NG. Bldg 1369 was constructed in 1948 as a glycerin heater. Bldg 1372 was constructed in 1948 as a change house and office for NG production operations. Bldg 1373-A was demolished sometime after 1987 under the TECUP program. The only chemical known to have been associated with Bldg 1373-A was acetone. Bldg 1414 was constructed in 1948 as a propellant dry house. Bldg 1414-A was constructed in 1942 as a fan house to serve the propellant dry houses (Bldgs 1414 and 1415). Bldg 1415 was constructed in 1948 as a propellant dry house. Bldgs 1414, 1414-A, and 1415 have been demolished. Bldg 1418 was constructed in 1942 as a storage and shipping building. Bldg 1437 was constructed in 1956 as a cast propellant plant.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS OF CONCERN:
Metals, Explosives, VOCs
MEDIA OF CONCERN:
Groundwater, Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS, LTM
FUTURE IRP PHASE:
LTM

The 7500 gallon UST, formerly located at Bldg 1037, was sampled in 1988 and removed in 1990. Post excavation soils analysis for TPH indicated all concentrations were below LOC. An internal tank investigation was performed in 1993 at Bldgs 1030 and 1038, in which tanks at Bldg 1038 were sampled and analyzed for toluene and TCLP metals. No detections were above LOC. The tanks at Bldg 1030 were empty, thus no samples were collected.

The PICA-200 buildings were included as part of the 1996 PA/SI for VOCs, SVOCs, pesticides/PCBs, explosives, metals, and anions analysis in soil. Metals were detected above LOC at Buildings 1030, 1414, 1415, and 1437. PAHs were detected at concentrations greater than LOC at Building 1414-A. Based upon results of the PA/SI, Buildings 1030, 1037, 1038, 1090, 1414, 1414-A, 1415, and 1437 were included as part of the Phase III 2A/3A RI. Field activities performed in 2000 and 2001 identified metals exceedences in soil at Building 1030 and elevated levels of nitrocellulose in soil at Building 1415. The extent of this contamination has been delineated, and no further sampling is proposed. Potential groundwater contamination is being addressed on an area-wide basis as part of the Mid-Valley Investigation. Human health risk assessments were completed for the individual buildings. Risk and hazards were below the target levels of 1E-4 and 1 for all buildings. Ecological risk will be addressed as part of the Phase III Ecological Risk Assessment.

PROPOSED PLAN

A PP and ROD will be completed. Institutional controls are expected.

The stainless steel catch tank at Building 1437 will be removed (funded in FY03).

PICA-204
Area H & Mid-Valley Groundwater

SITE DESCRIPTION

The Mid-Valley region at Picatinny Arsenal (PTA) consists of Study Areas F, G, H, and the northwestern part of Area L. Several regional groundwater issues have been identified within this area during previous investigations; however, the four study areas have not been investigated in regards to regional groundwater flow and contaminant transport.

Previous studies have focused on individual sites or Areas of Concern (AOCs) and have been unable to study the full extent of regional contamination across study area boundaries. Dames and Moore completed the Phase I Remedial Investigation (RI), including Areas F and G, at PTA in 1998. During that investigation, several constituents of concern (COCs) were identified in the groundwater at sites within the F and G study areas. These COCs included trichloroethene (TCE), tetrachloroethene (PCE), RDX, and metals. Calculations for the hypothetical future use of groundwater by future residents and workers exceeded the carcinogenic risk criteria of 1E-06, and the non-carcinogenic hazard criteria of 1. The Phase I RI concluded that these COCs might have upgradient sources in Areas H (to the west) and L (to the east), which are impacting the groundwater in Areas F and G. Subsequent investigations by ICF Kaiser Engineers (ICFKE) have focused on the Area H and L study sites (Phase II and Phase III RIs, respectively); and on further characterizing the extent of contamination at the Area F and G study sites (Phase I Additional Remedial Investigation and Area F&G Groundwater Investigation). During the Phase II and Phase III RIs, TCE, PCE, RDX, and metals were detected at concentrations greater than LOC in groundwater in Areas H and L.

This investigation is a regional investigation that identifies data needs necessary to characterize both the potential source areas for the COCs and the downgradient extent of contaminant migration. Several likely candidates for the source areas were identified during the RIs in Areas H and L. These areas are being further characterized to determine the lateral and vertical extent of contamination. Furthermore, the migration pathways between these source areas and the AOCs in Areas F and G need to be defined in order to understand the eventual fate of the COCs. Currently, groundwater issues in Areas F, G, H, and L are being evaluated together as the Mid-Valley operable unit. A groundwater RI was started in late 2001 to delineate the plumes. It is currently believed that this contamination is discharged into Green Pond Brook. A data gap investigation was started in 2003.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
VOCs, Explosives, TCE
MEDIA OF CONCERN:
Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
RI/FS, LTM

PROPOSED PLAN

A FS will be completed. It is proposed that ~23 wells will be monitored for explosives and VOCs on a quarterly basis for the initial 2 years, then annually for 8 years, then bi-annually. Approximately 60 other wells will be abandoned.

PICA-205
Area B Groundwater

SITE DESCRIPTION

The groundwater in this area is being addressed independently of the other media. All other environmental media at this site are being addressed under PICA Site 66. There are two sites within Area B, Site 20; a pyrotechnic range and Site 24; a sanitary landfill. Site 20 is located entirely within Site 24. Site 24 consists of cleared, reclaimed/ filled wetlands containing several small mobile buildings/sheds, ponds, and man-made drainage ditches. The most prominent feature of Site 24 is the Landfill pond that occupies an area of approximately 1-acre. Documentation indicates that fly ash, ordnance, industrial waste, and sludge from the water treatment plant were reportedly disposed of at Site 24 until 1972. There is strong potential for an off-post production well to be operated nearby.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
VOCs, Xylenes
MEDIA OF CONCERN:
Groundwater
COMPLETED IRP PHASE:
PA
CURRENT IRP PHASE:
RI/FS, RD (funded)
FUTURE IRP PHASE:
RA, RA(O)

Groundwater investigation began in 1981-84 when two wells were installed and sampled for VOCs and metals. A geophysical survey was performed in 1986. Three additional wells were installed and sampled for VOCs, SVOCs, metals, anions, and phenols in 1989. VOCs, metals, and anions were detected above LOCs. In 1994, the remedial investigation included geophysical, radiological, and soil gas surveys, and installation of more wells where VOCs and metals were detected above LOC. HHRA was calculated to be above $1x10^{-4}$ (assuming on-site consumption of groundwater). Follo-up Geoprobe investigation in 1996 and additional well installation in 1998 and 1999 were all carried out to close data gaps associated with plume delineation or potential remedial alternatives. The most recent investigation included a 'redox zonation' to assess the potential for MNA. All of these investigations found elevated levels of VOCs in the two uppermost aquifers.

A Feasibility Study was submitted in Apr 2002 which examined MNA, chemical oxidation, iron slurry injection, hydrogen release compound (HRC), oxygen release compound, and pump and treat. The final FS recommends expedited treatment of groundwater using HRC. Prior to this FS recommendation, the Army performed a pilot scale injection of iron slurry for chemical reduction of chlorinated organics (completed in Feb 2002). This process was not found to be effective at this site. A HRC pilot study is expected to be completed in fall 2003. The anticipated remedial alternative is injection of hydrogen release compound to try to meet cleanup standards within 7 years.

The proposed plan was submitted in 2002.

PROPOSED PLAN

HRC will be injected in the most contaminated portions of the plume. Remediation is expected to be completed within 7 years.

PICA-206
Area C Groundwater

SITE DESCRIPTION

Area C is approximately 126 acres in size and is located in the south-western portion of PTA, near the southern boundary of the Arsenal. Area C consists of the following six study sites: Site 19 - Pyrotechnic Demonstration Area (DSERTS #020), Site 23 - Post Farm Landfill (DSERTS #065), Site 25 - Sanitary Landfill (DSERTS #067), Site 26 - Dredge Piles from Green Pond Brook (DSERTS #068), Site 163 - Baseball Fields (DSERTS #092), and Site 180 - Waste Burial Area (DSERTS #093). PICA 206 covers all groundwater in Area C with the exception of Site 23 groundwater. Due to the geographic and elevation differences between Site 23 and all of the remaining sites in Area C, Site 23 groundwater is being addressed along with the remaining media at Site 23 (PICA-065). There are 47 wells in Area C. There is strong potential for an off-post production well to be operated nearby.

An area-wide groundwater assessment was performed as part of the 1994 remedial investigation. In the RI, groundwater exceedances were found for VOCs, one SVOC, and metals. The HHRA indicated that carcinogenic risk fell between or exceeded the $1X10^{-6}$ to $1X10^{-4}$ range. Carcinogenic risk is primarily from carbon tetrachloride, chloroform, trichloroethene, arsenic, beryllium, heptachlor epoxide, and dioxins/furans. In 2001, an additional round of groundwater samples were collected for VOCs, metals, explosives, perchlorate and dioxins. Groundwater analyses were targeted to include only previous detections. Results indicated exceedances of VOCs and metals. Additional delineation of these samples was conducted in 2002 and one year of quarterly sampling was conducted for the 16 Southern Boundary wells between fall 2002 and summer 2003. A Proposed Plan focusing on long term monitoring will be completed in 2004, followed by a Record of Decision.

STATUS

RRSE RATING: High Risk

CONTAMINANTS:
Metals, VOCs, Explosives

MEDIA OF CONCERN:
Groundwater

COMPLETED IRP PHASE:
PA

CURRENT IRP PHASE:
RI/FS, RA

FUTURE IRP PHASE:
RA(O)

PROPOSED PLAN

Due to the level of contamination at the site, it is anticipated that long term monitoring will be sufficient to address the groundwater contamination.

PICA-207
Storage Building 63

SITE DESCRIPTION

Building 63 is a large, open shed, with no walls throughout most of its length, and a large second floor with a ramp at the northeast end leading to the second floor. The building was constructed in 1942 as a lumber and box storage area, and has always been used for storage. Currently, the building is being used for lumber and pipe storage, miscellaneous storage and storage of several military vehicles. Bear Swamp Brook is adjacent to the site about 40 feet away. Floor plans for the building indicate that storage of transformers and "toxic lumber" has taken place at the site.

In 1997, USACHPPM conducted a Relative Risk Site Evaluation at the site. During this evaluation no evidence of spills or releases from the site were found. Six composite surface soil samples were collected from the two areas of concern. Arsenic was the only compound detected above LOC. USACHPPM determined that the relative risk associated with the site was low.

STATUS

RRSE RATING: Low Risk

CONTAMINANTS OF CONCERN:
Metals

MEDIA OF CONCERN:
Soil

COMPLETED IRP PHASE:
PA

CURRENT IRP PHASE:
RI/FS

FUTURE IRP PHASE:
LTM

PROPOSED PLAN

Institutional controls will be recommended as a remedy for this site.

PICA-209
Bldg 167, Locomotive Area, Bldg 430

SITE DESCRIPTION

PICA 209 consists of five separate buildings (Bldg 167, 303, 426, 426A, 430) in Area F, grouped together by USACHPPM for a relative risk site evaluation (RRSE).

Building 167 was constructed in 1930 as an explosives prep laboratory. The building was also used as a nuclear chemical research laboratory and is currently vacant. Drums containing radionuclides were stored on the eastern side of the building. The building contained hot laboratories where sink drains, equipment drains, and floor drains were routed to collection tanks in the basement. These tanks received low-level radioactive waste and solvents. The radiation protection office tested and cleared the piping before removal in 1973. All of the tanks but one were removed at this time. No closeout or closure survey was conducted. There were reportedly piping leaks in the building basement.

Former Building 303, Locomotive Area, was used to maintain all locomotives prior to 1926. The building is demolished except for foundation and service pits that show evidence of petroleum contamination and contain coal clinkers.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS: Metals, Petroleum, SVOCs, Radiologicals
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS, RD, RA
FUTURE IRP PHASE:
LTM

Building 430 is a former propellant systems facility used to produce and test small batches of nitroglycerine. Liquid wastes generated in the building were retained in lead catch tanks installed in the 1950s. Overflow from the tanks was discharged onto the soil. Bldg 462A, built in 1941, was used for storage as part of the neutralizing house for the guncotton line. It is currently used for storage of explosives. The building contains a concrete sump, formerly used to receive wastewater from Bldg 462. The water was then discharged into a ditch located southwest of the building. Former Bldg 426 was used as a mixing house prior to its destruction during an explosion in 1945. No other information is available concerning this building.

In 1998 USACHPPM performed a RRSE for the five buildings/storage areas associated with this site. Samples were collected at each bldg except former Bldg 426. Metals, explosives, and PAHs were detected in soil above LOC . VOCs, explosives and metals were identified in the groundwater above LOC. In 2000 and 2001 surface and subsurface soil were collected for arsenic, lead and explosives. The analytical results have successfully delineated the extent of contamination at each building, and no further sampling is proposed. Individual HHRAs were performed for the five bldgs. Risks were above 1E-4 at Bldg 167 and 430. Hazards were above the target levels of 1 at Bldg 430 and former Bldg 303. Lead was also a health concern at these two buildings. A final release survey, including remediation and removal of contaminated radiological items (in 2002), was performed at Building 167 by the U.S. Army Joint Munitions Command (non-ER,A funds). Approximately 13.5 cubic feet of soil were excavated and disposed of off site. Based on the post-excavation results, no further remediation of the radiological contamination is required. The lead-contaminated soil is scheduled to be removed in 2004.

PROPOSED PLAN

A FS to include a PP and ROD will be completed. Contaminated soil (PAHs from Bldg 167, lead/explosives from Bldg 430 and lead from Bldg 303 and 430) will likely be removed. The remainder will be disposed of off-site.

Groundwater contamination will be evaluated as part of the Mid-Valley investigation.

PICA-020, Site 19
Pyrotechnic Demo Area

SITE DESCRIPTION

Site 19 is 5.5 acres in size and is located south of the junction of Shinkle Road and South Brook Road. South Brook Road and Green Pond Brook border Site 19 to the northwest. Site 34, the Burning Ground, is to the southwest and Shinkle Road is to the northeast. Site 19 was once a tree-covered wetland. During the late 1940s and early 1950s, the wetland was reclaimed for Arsenal use by installing two parallel drainage ditches and landfilling with construction debris and borrow pit material. Currently, the surface of Site 19 is flat and consists primarily of hard-packed dirt or gravel, and is partly vegetated with low weeds. Two buildings are located on Site 19. Building 1180, constructed in 1948, is a 50-ft high steel tower located in the southwest corner of the site. The tower has been used for various tests including track technology testing for a M60 Full Tracked Combat Tank, and for the candle power determination of M26 flares. Building 1186 was constructed in 1966 of wood on a concrete foundation with a dirt floor, metal roof, and one plexiglass wall. Building 1186 was originally used as a pyrotechnic view stand. Later, the site was used for the storage of M60 Army Tanks, and since 1980, it has been used to store miscellaneous non-hazardous items. In the past, the area between buildings 1180 and 1186 was used for tank testing. During the performance of the Phase I RI (1992-93), a portion of the site was used for IDW drum storage, and as a staging and decontamination area for drill rigs.

Three investigations have been performed at Site 19 – USGS Geophysical Survey (1986), Site Investigation (1988), and Phase I Remedial Investigation (1995). Soil contaminants have been identified for Site 19 based on sample data; however, most are present at low concentrations. Although two metals, arsenic and beryllium, are present at concentrations exceeding comparison criteria for surface soil, all other detected constituents are present at concentrations below available comparison criteria in both surface and subsurface soil. Thus, this site will be under institutional controls and LUCAP as detailed in the “Institutional Control Proposed Plan for Soils at Sites: 19, 28, 44, 49, 86, 106, 124, 135, 141, 143, 163, 182, and 183, (March 2000)”. The public notice for this proposed plan was completed in July 2001. A ROD was submitted to the regulators in summer 2001. Regulatory approval of this ROD has been delayed because of the release of new USEPA guidance on the use of land use controls. The USEPA is performing additional review in light of this guidance. This site is considered response complete because a proposed plan and record of decision are funded for the site.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
Metals, VOCs
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 1997

PICA-036, Site 106
Former Propellant Plant, Bldg 1010

SITE DESCRIPTION

Former Building 1010 was located between Babbitt Road and Belt Road east of the PTA Power Plant, Building 506. The building was originally constructed as a propellant plant and an acid recovery plant. The exact demolition date of Building 1010 is unknown, but was sometime between 1979 and 1991. The building was destroyed as part of the Toxic Energetics Cleanup Program (TECUP). Reportedly, PCB-based transformers were overturned during the TECUP operations and their contents spilled onto the ground. Following demolition, all building debris was buried at the site.

One investigation has been performed at Building 1010 – the Phase I Remedial Investigation (1995). Surface soil and subsurface soil were collected during the excavation of three test pits and analyzed for VOCs, BNAs, pesticides/PCBs, explosives, metals, and cyanide. A variety of constituents were detected in samples at Building 1010, with most detected at low concentrations below available comparison criteria. PCBs were detected at concentrations exceeding NRDCSCC in only one surface soil sample and subsurface soil with a maximum concentration of 10.8 mg/kg. Carcinogenic human health risk was calculated to be $7X10^{-5}$ for future Industry/Research worker and $7X10^{-6}$ for future Construction/Excavation worker. Although total PCBs are a concern in the surface and subsurface soils at one test pit location from the Phase I RI, the PCB detection may be the result of past site activities and the destruction of PCB transformers. Thus, this site will be under institutional controls and LUCAP as detailed in the "Institutional Control Proposed Plan for Soils at Sites: 19, 28, 44, 49, 86, 106, 124, 135, 141, 143, 163, 182, and 183, (March 2000)". A ROD was submitted to the regulators in summer 2001. Regulatory approval of this ROD has been delayed because of the release of new USEPA guidance on the use of land use controls. The USEPA is performing additional review in light of this guidance. This site is considered response complete because a proposed plan and record of decision are funded for the site and institutional controls are funded on an installation-wide basis.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
PCBs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 1997

PICA-054, Site 8
Munitions & Prop. Test Area (B-1222)

SITE DESCRIPTION

This site is approximately 4 acres in size, and is located west of Lake Denmark along Gorge Road at an elevation of 850 ft. above sea level. The site consists of a large sand berm along the east side of the site, where the open detonation of waste ordnance and explosives takes place. This open detonation (OD) area is approximately 1/3 acre in size. A Part B, Subpart X permit application for the OD area was submitted to the NJDEP in Fall 2000. Six monitoring wells have been installed around the OD area to monitor groundwater as part of the Subpart X permit application process. The rest of the site consists of bunkers, an observation building, and cleared areas used to test large and small caliber weapons, ammunitions, and various explosive devices.

This site is currently an active range, thus is not eligible for IRP funds.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 1997

PICA-055
Munitions & Prop. Test Area (B670, B673, B674)

SITE DESCRIPTION

This range is located near the western boundary of Picatinny Arsenal at an elevation of 1125 ft. above msl. Relatively small metal projectiles, which are launched and propelled by explosive charges, are tested at the site. According to PTA personnel, 500-lb bombs were previously manufactured at the site. In addition, lead azide and 15-lb blocks of explosives were destroyed at the site.

This site is currently an active range, thus is not eligible for IRP funds.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
Metals, Explosives
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2001

PICA-059, Site 13
Munits/ Pyrotec Test Area Bldg 640

SITE DESCRIPTION

This range is located on top of Green Pond Mountain and is accessed via Nicholls Road. The total area of the site is approximately 5.5 acres and is used for the testing of munitions under development. This site is currently an active range, thus is designated as response complete.

This site is not eligible for IRP funds.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS OF CONCERN:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 1997

PICA-060, Site 14
Munitions Test Area (B-636)

SITE DESCRIPTION

This range is 20 acres in size and is located adjacent to Bear Swamp Road, encompassing parts of Stickle, Hance, and Roth Roads. Testing at this site consists of the firing of projectiles from large-caliber guns to test propellants, metal integrity, and weapon systems. The projectiles are fired into sand-filled bunkers and recovered after firing.

This site is currently an active range, thus is not eligible for IRP funds.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2001

PICA-061, Site 15
Munitions Test Area (B616, B654)

SITE DESCRIPTION

This site consists of 2 areas, each approximately 4 acres in size, and is located northwest of Picatinny Lake in the central portion of Picatinny Arsenal. Static detonation testing is conducted on a metal stand over a gravel pad in the Building 616 area. The Building 654 area is a demonstration area where small projectiles are fired into sand piles.

This site is currently an active range, thus is not eligible for IRP funds.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2001

PICA-063, Site 20
Pyrotechnic Testing Range

SITE DESCRIPTION

Site 20 consists of a pyrotechnic testing range near the southern boundary of the Arsenal. This range is completely contained within the Site 24 (PICA 66) site boundary. PICA-063 has been combined with PICA-066, Sanitary Landfill (Site 24), and both are being addressed concurrently under PICA-066. Thus, PICA-063 is considered response complete.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS:
Metals, Vinyl Chloride
MEDIA OF CONCERN:
Groundwater, Sediment
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2002

PICA-068, Site 26
Dredge Pile

SITE DESCRIPTION

The dredge pile is located in the central valley of PTA near the southern boundary. The dredge pile consists of an irregular shaped pile of sediments dredged from portions of GPB. This site lies completely within Spicer Landfill, approximately 700 feet east of GPB and 100 feet west of two baseball fields. The height of the piles varies from 15-20 feet, and covers an area of less than 1 acre. The estimated quantity of dredged material is about 12,000 cubic yards, the disposal area is unlined and the piles are not capped. Most of the surrounding Site 25 was a former landfill, so the material under the piles may consists of wood, paper, and scrap metal and other debris intermixed with soil.

Most of the material disposed of on this site was dredged from two locations along GPB in 1982. GPB was dredged from Site 34-Lower Burning Ground, and a location adjacent to the DRMO Yard (Site 31). Dredging was conducted to remove shells found in GPB. GPB has received waste streams from most operations at PTA, including sewage and industrial wastewater discharges, storm runoff, and discharge from contaminated groundwater plumes. Consequently, the dredged material from the brook is suspected to contain a variety of potential contaminants. This site is currently inactive.

PICA-068 has been combined with PICA-067, Sanitary Landfill (Site 25), and both are being addressed concurrently under PICA-067. Thus, PICA-068 is considered response complete.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS:
VOCs, Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 1997

PICA-070, Site 28
Sewage Trmt Plant Sludge Beds (B80)

SITE DESCRIPTION

Site 28 consists of inactive sludge beds associated with a still active sewage treatment plant. These sludge beds were located on the west side of the Building 80 Sewage Treatment Plant, which is located along Green Pond Brook in the southern portion of Area E. This plant was designed to provide primary physical treatment, secondary biological treatment, and tertiary chlorination of sanitary wastewater. The effluent from the tertiary treatment system flows into a final settling unit prior to being discharged into Green Pond Brook. Until 1971, the sludge generated at the plant was dewatered, utilizing a series of four sand filters (ANL, 1991). During the late 1960s, the treatment plant was modified and the sludge beds were removed from service. After the sludge beds were decommissioned, sludge generated at the plant was transported to an offsite solid waste disposal facility.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
None
MEDIA OF CONCERN:
None
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 1997

The area occupied by the former sludge beds was approximately 9,500 $ft.^2$. The sludge beds were surrounded by a low berm made of earthen material and were underlain by compacted and stabilized ground and stone fill. Each of the sludge beds were separated from the others by wooden planks that extended throughout the length of the bed. The sludge beds were equipped with a leachate collection system, which consisted of a series of 4-inch asbestos cement pipes laid at regularly spaced intervals throughout the length of the bed. These pipes discharged into an 8-inch central collection pipe, located in the middle of each sludge bed. All leachate collection pipes were covered by a 13-inch layer of gravel overlain by a 6-inch layer of sand. The leachate collection from the sludge beds was mixed with influent wastewater and recirculated into the sewage treatment plant.

Three investigations have been performed at Site 28 – USGS Geophysical Survey (1986), Site Investigation (1988), and Phase I Remedial Investigation (1995). Soil contaminants have been identified for Site 28, however, most are present at low concentrations and all constituent concentrations in both surface and subsurface soil are present below respective comparison criteria. Thus, this site will be under institutional controls and LUCAP as detailed in the “Institutional Control Proposed Plan for Soils at Sites: 19, 28, 44, 49, 86, 106, 124, 135, 141, 143, 163, 182, and 183, (March 2000)”. The public notice for this proposed plan was completed in July 2001. A ROD was submitted to the regulators in summer 2001. Regulatory approval of this ROD has been delayed because of the release of new USEPA guidance on the use of land use controls. The USEPA is performing additional review in light of this guidance. This site is considered response complete because a proposed plan and record of decision are funded for the site and institutional controls are funded on an installation-wide basis.

PICA-078, Site 39
Vechl Maint Former WW Pretreatment Fac (B-31)

SITE DESCRIPTION

Site 39, the northeast wing of Building 31, is located in what was historically the central manufacturing valley at Picatinny Arsenal. Building 31 was constructed in 1943 and has an area of 87,074 ft^2. Site 39, the Vehicle Maintenance Wastewater Treatment Plant, is located within Wing 1 of Building 31. The Vehicle Maintenance Treatment Plant was used as a wastewater treatment unit, utilizing a mechanical skimmer to treat oily wastewater generated by the vehicle maintenance and washing operations from Building 33 (Site 45 – PICA 084), located across Fourth Court from Building 31. It is unknown when the use of the treatment plant was discontinued.

Prior to closure activities in September 1990, an in-ground sump collected oily wastewater from the floor of the Vehicle Wash Area and from roof drains in Building 33. The wastewater was then piped under the street to the treatment unit, located in Wing 1 of Building 31. After flocculation and treatment with a cationic polymer, suspended particles froth and oil were skimmed from the surface and sent to a 1,000-gallon UST at the corner of Fourth Avenue and Fourth Court. The remaining effluent entered a float-treat tank and then the sanitary sewer. Dirt and other heavy solids in the effluent sank to the bottom of the float-treat tank, where a mechanical screw flushed the sediment to the 1,000-gallon UST. The waste from the 1,000-gallon UST was shipped off-post on a regular basis. RCRA activities included removal and confirmatory sampling of the soil beneath the 1000-gallon UST. The State considers the UST to have been closed. No remedial investigation activities were conducted as part of the Phase I RI in 1994 due to the ongoing RCRA activities. Additional investigation was carried out in the late 1990's.

Any future actions needed at this site will be funded under PICA-071, as the site is near or the same geographically and is under the ECI sites.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
Petroleum
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2001

PICA-083
Golf Course Maintenance (Bldg 39)

SITE DESCRIPTION

Since 1981, Building 39 has been used primarily to house golf course maintenance equipment (e.g., lawn mowers), and to store gasoline (stored in tanks located on the east side of Building 39) and oil and grease used in mowers and other mechanical equipment maintenance operations. Until 1988, the building was also used for storing and mixing small quantities of pesticides and herbicides.

No environmental samples were collected at Site 44 as part of the Phase I RI due to ongoing operations. However, 3 previous investigations at this site identified pesticide contamination in surface and subsurface soil. Based on the results of these previous investigations, the following 3 areas of concern were identified:

1. potential vertical extent of pesticide contamination in the former excavation area located on the east side of Building 39;
2. possible impact to Green Pond Brook from past pesticide mixing activities at Site 44; and
3. potential impact to the drainage ditch located south of the pump and treat system due to past activities at Bldg 39.

In order to address these AOCs, additional samples were collected as part of the Phase I Additional RI conducted in 1997. Pesticides were detected in one groundwater and two surface soil samples at concentrations well below their levels of concern (LOCs). Therefore, institutional controls are recommended at Site 44 because all three AOCs have been characterized. Thus, this site will be under institutional controls and LUCAP as detailed in the "Institutional Control Proposed Plan for Soils at Sites: 19, 28, 44, 49, 86, 106, 124, 135, 141, 143, 163, 182, and 183, (March 2000)". A ROD was submitted to the regulators in summer 2001. Regulatory approval of this ROD has been delayed because of the release of new USEPA guidance on the use of land use controls. The USEPA is performing additional review in light of this guidance. This site is considered response complete because a proposed plan and record of decision are funded for the site.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS OF CONCERN:
None
MEDIA OF CONCERN:
None
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2000

PICA-087
Auto Hobby Shop (Bldg 3315)

SITE DESCRIPTION

This site contains Buildings 3314 and 3315, which were used for storage. Building 3315 was constructed in 1931 for its current use as a general storehouse and auto hobby shop. Waste produced by building activities include brake fluid, used motor oil, transmission fluid, and antifreeze. Waste is stored in 55-gallon drums on pallets behind the building, and regularly transported to Building 3100 for off-site disposal.

Building 3314 was a small shed, reportedly used to store waste oils and clean 55-gallon drums. It was also once an office and lunchroom for the warehouse workers from Building 3315. The pallet area, where waste 55-gallon drums from Building 3315 were stored, was located directly in front of Building 3314. In 1991, separate RCRA closures were performed for Buildings 3314 and 3315. Due to the dilapidated condition of Building 3314, it was demolished and removed from the site. As part of the Building 3315 closure, one soil sample from the drum storage area was collected for closure verification. Levels of SVOCs were detected in excess of NJDEP criteria. In 1992, a large concrete pad was constructed to replace the old waste storage area.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
Metals, TPHs, SVOCs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2001

No RI sampling was performed at this site, pending NJDEP response on the RCRA closure. In response to regulatory comments on the site, additional sampling was performed in 2001 to investigate the SVOC and TPH concentrations reported in the Building 3315 closure report.

This sampling identified SVOCs at levels above the comparison criteria. Additional sampling is planned for 2002.

PICA-088
Soldering Storage Area (Bldg 19, 19a)

SITE DESCRIPTION

Site 49 consists of Buildings 19 and 19-A and the surrounding grounds, which encompass approximately 0.51 acres. A transformer pad is located at the southern end of the building. Building 19 is currently used as a training facility for high-reliability soldering. Various solvents were used to clean circuit boards prior to soldering. Wastes generated include soldering flux, freon, lead oxide, and oil. Until a 1991 RCRA Closure Investigation and subsequent removal, the generated waste solvents were placed in drums and stored in adjacent Building 19-A, the 90-Day Waste Accumulation Area. In the past, waste solvents had on occasion been stored in the shed for periods exceeding 90 days. Since Building 19-A was removed, no wastes have been generated in Building 19. Isopropanol is now used in small quantities and volatilizes during cleaning.

The maximum inventory of hazardous waste stored in Building 19 is two 55-gallon drums of waste solvent/soldering fluxes and ten 5-gallon metal drums of waste solvents (ANL, 1991).

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
Lead
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 1997

Building 19-A was a small shed located near Building 19. The roof was constructed of asbestos and the walls of hollow tiles. The floor was constructed of wood over a concrete foundation (ANL, 1991). During renovation of Building 19 in October 1991, Building 19-A was removed from its foundation and placed near Building 267. The new entrance to Building 19 was constructed on the old foundation of Building 19-A. In 1991, as part of RCRA closure activities, Building 19-A was moved from the vicinity of Building 267 to a parking lot near former Building 1010.

This site underwent a RCRA closure, which received NJDEP approval. Thus, this site will be under institutional controls and LUCAP as detailed in the “Institutional Control Proposed Plan for Soils at Sites: 19, 28, 44, 49, 86, 106, 124, 135, 141, 143, 163, 182, and 183, (March 2000)”. The public notice for this proposed plan was completed in July 2001.

PICA-092, Site 163 Baseball Fields

SITE DESCRIPTION

Site 163 is comprised of two baseball fields and a playground located immediately north of the intersection of Spicer Avenue and Klanderman Lane. The site is 3,000 ft from PTA's southern boundary and 100 ft west of Green Pond Brook. Sites 25 and 26 are adjacent to Site 163 to the northwest. Site 163 is approximately 400 ft by 800 ft, relatively flat and slopes slightly to the west and southwest. According to the ANL RI Concept Plan, unknown materials may have been disposed of in pits at Site 163 or at Site 176, the Little League Baseball Field. In addition, material dredged from Green Pond Brook was spread on the baseball fields at an unknown date.

Two investigations have been performed at Site 163 – USAEHA Soil Investigation (1991) and Phase I Remedial Investigation (1995). Soil contaminants have been identified for Site 163, however, most are present at low concentrations and all constituents are present below LOC. Thus, this site will be under institutional controls and LUCAP as detailed in the "Institutional Control Proposed Plan for Soils at Sites: 19, 28, 44, 49, 86, 106, 124, 135, 141, 143, 163, 182, and 183, (March 2000)". The public notice for this proposed plan was completed in July 2001. A ROD was submitted to the regulators in summer 2001. Regulatory approval of this ROD has been delayed because of the release of new USEPA guidance on the use of land use controls. The USEPA is performing additional review in light of this guidance. This site is considered RC because a proposed plan and record of decision are funded for the site.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS OF CONCERN:
Arsenic
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 1997

PICA-095, Site 86 Bldg 12, Photo Processing Fac

SITE DESCRIPTION

Site 86, that encompasses Building 12, is located at the intersection of Phipps Road and Fourth Street. Building 12, referred to as the Battle Field Automation and Technical Data Directorate, was constructed in 1977. It was identified as a study site because of the hazardous chemicals handled during photoprocessing. Prior to 1977, three small, unidentified structures existed in the area occupied by this building. Most of Building 12 is occupied by administrative offices. Photoprocessing operations have been conducted in an area located in the southwestern corner of the building.

Building 12 provides automated data processing support for various organizations at PTA. Such support requires the use of computers, microfilm, and microfiche photoprocessing equipment. The photoprocessing operations at Building 12 primarily consist of converting engineering drawing into 35-mm microfilm.

One investigation has been performed at Site 86 – the Phase I Remedial Investigation (1995). A variety of constituents were detected in samples at Site 86, with most detected at low concentrations below LOC. Only arsenic exceeded LOC. Thus, this site will be under institutional controls and LUCAP as detailed in the "Institutional Control Proposed Plan for Soils at Sites: 19, 28, 44, 49, 86, 106, 124, 135, 141, 143, 163, 182, and 183, (March 2000)". The public notice for this proposed plan was completed in July 2001. A ROD was submitted to the regulators in summer 2001. Regulatory approval of this ROD has been delayed because of the release of new USEPA guidance on the use of land use controls. The USEPA is performing additional review in light of this guidance. This site is considered response complete because a proposed plan and record of decision are funded for the site and institutional controls are funded on an installation-wide basis.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
Lead
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 1997

PICA-099, Site 182
Bldg 5, Arsenal Reprtion & Trng Off

SITE DESCRIPTION

Site 182 consists of Building 5, which is located on First Avenue southwest of the intersection with Farley Avenue. Building 5 is a one-story structure with a concrete foundation, 8-inch hollow tile walls, and corrugated asbestos roof. The building was constructed in 1918 and has an area of 4,500 ft^2. According to the Evaluation of Historic Structures, Building 5 served as a Storage Magazine (WCH Industries, 1994). According to the Real Property Record, the building was used to store flammable materials.

The northern portion of Building 5 was used for computer-aided design (CAD) services. The southern end of Building 5 contains two photoprocessing units that were used until 1992. Each of the photoprocessing units has a different system for managing process wastes. One of the two photoprocessors was directly connected to a silver recovery unit. The effluent from the silver recovery unit was directed to a sanitary sewer. Waste chemicals from the second photoprocessing unit were accumulated in 5-gallon containers and transferred to Building 314 for silver recovery. The maximum waste inventory at Building 5 during a 3-month period was six 5-gallon containers of spent photochemicals. Exemption from the RCRA Part B permit was claimed for the photoprocessing units. According to the spill response log and environmental and safety files, no spills or releases were reported at Bldg 5.

One environmental investigation was conducted at Site 182, a RCRA Closure Verification Investigation in 1991. This RCRA closure received approval from NJDEP. Thus, this site will be under institutional controls and LUCAP as detailed in the "Institutional Control Proposed Plan for Soils at Sites: 19, 28, 44, 49, 86, 106, 124, 135, 141, 143, 163, 182, and 183, (March 2000)". The public notice for this proposed plan was completed in July 2001.. A ROD was submitted to the regulators in summer 2001. Regulatory approval of this ROD has been delayed because of the release of new USEPA guidance on the use of land use controls. The USEPA is performing additional review in light of this guidance. This site is considered response complete because a proposed plan and record of decision are funded for the site.

STATUS

RRSE RATING:
Not Evaluated
CONTAMINANTS OF CONCERN:
None
MEDIA OF CONCERN:
None
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 1997

PICA-100
Graphic Reproduction & Trng Bldg 58

SITE DESCRIPTION

Building 58 is located on First Avenue at the intersection of Fourth Street. Building 58 was constructed for lumber storage in 1937 and has a total area of 19,200 ft^2. The building was also used for general administration and office space. In 1971, Building 58 was listed as a printing plant. The printing press operations ceased in October 1993. Building 58 is currently listed as the Arsenal Graphic Reproduction and Training Offices, which include a photoprocessing facility. The photoprocessing area is located in the northern portion of the bldg. The southern portion of Building 58 is used for training and administration.

No environmental investigations have been conducted at Site 183. Due to renovation activities at Building 58, a closure plan for the site was not implemented. NJDEP stated in a letter dated 12/8/92 that the renovation work adequately addressed the closure requirements and the RCRA closure is complete. Thus, this site will be under institutional controls and LUCAP as detailed in the "Institutional Control Proposed Plan for Soils at Sites: 19, 28, 44, 49, 86, 106, 124, 135, 141, 143, 163, 182, and 183, (March 2000)". A ROD was submitted to the regulators in summer 2001. Regulatory approval of this ROD has been delayed because of the release of new USEPA guidance on the use of land use controls. The USEPA is performing additional review in light of this guidance. This site is considered response complete because a proposed plan and record of decision are funded for the site.

STATUS

RRSE RATING:
Not Evaluated
CONTAMINANTS OF CONCERN:
None
MEDIA OF CONCERN:
None
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 1997

PICA-101, Site 60
Bldg 163, Photography Lab

SITE DESCRIPTION

Building 163 was constructed in 1942 as a high explosives laboratory. The photography laboratory in Building 163 currently generates small quantities of developer, bleach/fixer, as well as black-and-white fixer and stop bath solution. Prior to 1984, these wastestreams were drained, via a 2-inch PVC pipe, from two sinks with Building 163 to a 1,000-gallon concrete UST, located adjacent to the northeast corner of the Building. In 1991, closure activities were performed on the UST. Closure activities involved excavation of the tank and associated piping. Excavated soil was shipped off-site for disposal. Confirmatory subsurface soil samples did not indicate any remaining chemical levels in excess of LOCs. NJDEP approved the closure, and no further action is required in relation to the UST. Currently, the spent photoprocessing chemicals are stored in containers, on a wooden floor, inside Building 163.

Groundwater samples collected from monitoring wells in the vicinity of the site contained PCE concentrations that exceeded LOCs. Explosives were also detected in the groundwater near the site. In response to NJDEP comments, additional soil characterization was performed, at the site to determine a potential source for the explosives. No sample concentrations exceeded any LOCs for explosives. No further sampling is proposed for this site. The Phase I ERA concluded that the woodcock are at risk due to high levels of metals in the area. However, neither the small mammal studies, nor the earthworm toxicity studies found any significant impacts in this area. As all samples collected at Site 60 during the Phase I 2A/3A RI, did not document any contamination concentrations above detection limits. The residential risk senario was evaluated and the risk and hazards were below target thresholds.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS:
PCE
MEDIA OF CONCERN:
Groundwater
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC

PICA-105, Site 124
Bldg 166, Propellant Test

SITE DESCRIPTION

Building 166 is located on Kibler Road north of the intersection of Farley Avenue. Building 166 is a one-story 48-ft x 58-ft structure, which was constructed in 1930 as a test chamber or accelerated aging chamber for propellants. The building is currently still used for this purpose. Operations at Building 166 have produced approximately 30 pounds per month of propellant waste that is stored in cans inside the building. Activities at Building 166 also intermittently produced about 0.1 gallons per hour of propellant wastewater, which is sent to the Burning Grounds for disposal.

One investigation has been performed at Site 124 the Phase I Remedial Investigation (1995). A variety of constituents were detected in samples at Site 124, with most detected at low concentrations below LOC. Although the concentrations of two metals, arsenic and copper, slightly exceeded LOC, the samples containing metals were collected from opposite sides of Building 166 and do not indicate widespread contamination. Thus, this site will be under institutional controls and LUCAP as detailed in the "Institutional Control Proposed Plan for Soils at Sites: 19, 28, 44, 49, 86, 106, 124, 135, 141, 143, 163, 182, and 183, (March 2000)". The public notice for this proposed plan was completed in July 2001. A ROD was submitted to the regulators in summer 2001. Regulatory approval of this ROD has been delayed because of the release of new USEPA guidance on the use of land use controls. The USEPA is performing additional review in light of this guidance. This site is considered response complete because a proposed plan and record of decision are funded for the site.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS OF CONCERN:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 1997

PICA-110, Site 141
Bldg 429, Propellant Crushing

SITE DESCRIPTION

Building 429 is located on 13th Avenue northeast of the intersection of Ninth Street. The building is a one-story rectangular structure with a concrete foundation, hollow tile walls, and a corrugated metal and asbestos roof. Building 429 was constructed in 1942 as a chemistry laboratory and contained five magazines for ammunition surveillance. In 1970, two test bays were constructed at Building 429 for propellant processing and one of the five magazines was converted into a control room. According to the 1982 PTA HABS/HAER Inventory, Building 429 was divided into two rooms. The rooms contained a spray booth with water cooling equipment, a cold storage area for carbon dioxide, and a jet mill to crush propellant grains for propellant property testing. The building also contained a catch tank that had not been used since 1981. According to a 1994 PTA Facilities Directory, Building 429 was inactive.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS OF CONCERN:
Metals
MEDIA OF CONCERN:
Surface Water
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2000

According to the ANL RI Concept Plan, operations at Building 429 generated approximately one pound of propellant waste per month. The 1991 Foster Wheeler Water Discharge Investigation Report indicated that a trough ran along the west side of the building and discharged onto the ground. It is possible that explosives contaminated washdown water from propellant crushing operations may have been discharged to this trough.

Two investigations have been conducted at this site: the Phase I Remedial Investigation in 1995, and the Phase I Additional Remedial Investigation in 1998. Additional RI analytical data from surface soil showed no constituents of concern at concentrations greater than LOC. Thus, this site will be under institutional controls and LUCAP as detailed in the “Institutional Control Proposed Plan for Soils at Sites: 19, 28, 44, 49, 86, 106, 124, 135, 141, 143, 163, 182, and 183, (March 2000)”.

The public notice for this proposed plan was completed in July 2001.. Regulatory approval of this ROD has been delayed because of the release of new USEPA guidance on the use of land use controls. The USEPA is performing additional review in light of this guidance. This site is considered response complete because a proposed plan and record of decision are funded for the site and institutional controls are funded on an installation-wide basis.

PICA-112, Site 143
Bldg 436, Propellant Processing

SITE DESCRIPTION

Building 436 is located off of 13th Avenue east of the intersection of Ninth Street. The building has hollow tile walls and a corrugated metal roof. Building 436 was constructed in 1948 as a propellant processing plant. The building contains a solvent mixing room, propellant mixing and drying rooms, and control rooms for the propellant mixers and ovens. Floor drains in the propellant mixing and drying rooms are connected to a pipe which discharges to a holding tank, located in a storage shed approximately 20 ft northwest of Building 436. According to PTA safety office files from 1992, Building 436 was used periodically in the preparation of small batches of propellant. Explosive wastes generated at Building 436, as a result of propellant operations, were destroyed at the PTA Burning Ground.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS OF CONCERN:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 1997

One investigation has been performed at Site 143 – the Phase I Remedial Investigation (1995). A variety of constituents were detected in samples at Site 124, with most detected at low concentrations below available comparison criteria. Bis-2-ethylhexyl phthalate and arsenic exceed respective comparison criteria in soil. Thus, this site will be under institutional controls and LUCAP as detailed in the “Institutional Control Proposed Plan for Soils at Sites: 19, 28, 44, 49, 86, 106, 124, 135, 141, 143, 163, 182, and 183, (March 2000)”. The public notice for this proposed plan was completed in July 2001. A ROD was submitted to the regulators in summer 2001. Regulatory approval of this ROD has been delayed because of the release of new USEPA guidance on the use of land use controls. The USEPA is performing additional review in light of this guidance. This site is considered response complete because a proposed plan and record of decision are funded for the site.

PICA-118, Site 135
Metallurgy Lab, Bldg 315

SITE DESCRIPTION

Site 135 originally consisted of Building 315, This site has been expanded to include Building 316, which is located northeast of Bldg 315. Bldg 315 was constructed prior to 1905 as a storehouse for sodium nitrate. The sodium nitrate was used in the manufacture of explosive powder. Bldg 315 has been used as a sodium nitrate storehouse, offices of the engineering division, research and development laboratories, physical sciences workshops, and metallurgical laboratories. DU contamination in the corrosion laboratory, machine shop, metallographic laboratory, and mechanical testing area resulted from site operations. DU contamination in the corrosion laboratory, machine shop, metallographic laboratory, and mechanical testing areas of both buildings had been identified. In 1994, action was completed to decontaminate and decommission the wastewater holding tanks and room 7 of Bldg 315. This action has been accepted by the NRC.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS OF CONCERN:
VOCs, SVOCs, Metals, Depleted Uranium
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2001

Bldg 316 was constructed in 1907 as a sodium nitrate storehouse. Bldg 316 has also been used as a Maintenance Operation Procedure (MOP) shop automation laboratory, a plasma equipment building, a uranium laboratory, a physical sciences facility, and, most recently, a metallurgy laboratory. A remedial action in Bldg 316 included disconnecting all utility hook-ups and all DU processing equipment was removed and all building surfaces were cleaned for “free release”. In 1996, a second phase of clean up was undertaken to remove a contaminated floor drain and section of drainpipe in Bldg 316. In 1998, Picatinny’s NRC license was amended by the NRC to allow unrestricted use of both buildings. Bldg 316 is currently used as a hazardous materials storehouse.

In 1994, a remedial investigation was completed including soil gas survey, surface soil sampling, and HHRA. Soil samples were analyzed for VOCs, BNAs, metals, cyanide, pesticide PCBs and explosives. There were no exceedances. The HHRA indicated that carcinogenic risk was below $1X10^{-6}$ for all three populations. The RI recommended no further action. However, based upon regulatory comments additional RI work was completed in 1997. This investigation included passive soil gas, the collection of surface and subsurface soil for VOCs, SVOCs, metals and radiologicals in some samples. Iron was the only exceedance in soil. The RI recommended that the site proceed to FS with institutional controls being the likely remedy. This site will be under institutional controls and LUCAP as detailed in the “Proposed Plan No Response Action with Existing Institutional Controls and Land Use Control Assurance Plan for Sites: 19, 22, 44, 49, 86, 106, 124, 135, 141, 143, 145, 163, 182, and 183, (March 2000)”. The public notice for this proposed plan was completed in July 2001. A ROD was submitted to the regulators in summer 2001. Regulatory approval of this ROD has been delayed because of the release of new USEPA guidance on the use of land use controls. The USEPA is performing additional review in light of this guidance.

In 2001, work was completed to terminate the NRC license for the building. Remediation of the salt fog chamber, contaminated duct work and plugged drain and radiological investigation of the plugged drain line was completed.

PICA-120, Site 21
Former Bldg 24 Plating Facility

SITE DESCRIPTION

Site 21 is located on Third Avenue, southwest of the intersection with Farley Avenue. The plating facility, built in 1942, was originally referred to as Buildings 24 and 45, but now is referred to only as Building 24. Building 45, the southern half of what is now known as Building 24, was originally a deburring, plating, and cartridge-case unit. This section of the building was demolished in 1999. The northern section of the building is still utilized as a welding shop. Components were processed in the deburring rooms prior to plating. The cartridge-case unit was utilized for reworking used cartridge cases, which were then cleaned and/or plated and sent to be reloaded. The original Building 24, the northern half of what is now known as Building 24, was a machine shop and shipping facility but was later converted to a welding shop. Building 24 was gutted in 1960, and a new plating facility was installed in the southeast section of the building. An industrial wastewater treatment plant (IWTP) was built in the southwest section of the building, adjacent to the plating facility. These two facilities compose Site 21.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS OF CONCERN:
TCE, EDC, Vinyl Chloride
MEDIA OF CONCERN:
Groundwater
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2000

Operations at the Building 24 plating facility included: anodizing with chromic and sulfuric acids; cleaning; degreasing; deburring; and plating with chromium, cadmium, copper, tin, and nickel. Each plating and etching process required a series of cleaning steps. The plating process consisted of a series of baths containing an assortment of chemicals and rinse solutions. The main chemicals used for the plating process were hydrochloric acid, nitric acid, chromic acid, various caustic solutions, black oxide, sodium bisulfite, sodium hydrosulfite, zinc phosphate, and sodium dichromate. The building contained a chemical storage area where chemicals and rinse solutions for the plating operation were kept. In the chemical storage area, new plating solutions were blended in tanks located over secondary containment pits. Waste generated from plating and anodizing operations included spent cyanide and chromic solutions, as well as wastewater. Operations requiring cyanide were discontinued in 1980. Washing and degreasing of metal parts prior to plating generated trichloroethene (TCE) waste. PTA discontinued the use of TCE in 1983 and began using 1,1,1-trichloroethane (1,1,1-TCA). Plating operations at Building 24 were discontinued in 1982, but activities such as degreasing, aluminum cleaning with mild caustic and aluminum anodizing using sulfuric and chromic acids continued until 1985. Building 24 was torn down and removed in 1999.

The contaminated groundwater from the old Building 24 is currently being addressed as part of PICA-076; thus PICA-120 is considered response complete.

PICA-176, Site 176
Little League Baseball Field

SITE DESCRIPTION

The Little League Baseball Field, approximately 120 x 200ft, is bordered on the southwest by Swamp Road, and to the west by Schrader Road. This site has been used as a ball field for at least the last ten years. According to reports, dredge material from Green Pond Brook may have been dumped at either the Little League Baseball Field, the Baseball Fields (Area C, Site 163), or both. In addition, for three years (unknown specifically when), materials were reportedly disposed of in pits below the site. However, it is unclear as to whether these materials were disposed of at this site or Site 163. If contaminated material was landfilled here, it is not known if uncontaminated soil was brought in to cover the graded landfill during the conversion of the site to a ball field.

Eighteen surface soil samples were collected in 1991 for the analysis of acid/base neutral compounds, metals, and PCBs. No contaminants were detected at levels greater than LOC. Twelve additional samples were collected as part of a risk assessment in 1991. The risk assessment concluded the risks to individuals, playing at or using the field, were negligible for carcinogenic and non-carcinogenic constituents. In 1996, a PA/SI was conducted for the analysis of surface soil for VOCs, SVOCs, pesticides/PCBs, explosives, metals, and anions. No parameters were detected above LOC during the PA/SI. RI activities were conducted in 2000 as part of the Phase III 2A/3A RI to characterize the subsurface soil. No contaminants were detected at concentrations greater than LOC in subsurface soil. Since no chemical concentrations exceeded the screening criteria, risk and hazards were not quantified for current land use. Evaluation of future residential exposure to the soil indicate the risk and hazards are below the target levels of 1E-4 and 1, respectively. Ecological risk will be addressed as part of the Phase III Ecological Risk Assessment.

A request for closure will be completed (funded in FY04).

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS OF CONCERN:
Metals, PCBs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC

PICA-177, Site 177
Sanitary Sewer System Breaks/Leaks

SITE DESCRIPTION

The sanitary sewer system at PTA consists of vitrified clay, cast iron, asbestos cement, and galvanized pipes. Due to the age of the facility, some of the sewer pipes are extremely old and have experienced cracks, sags, misalignments, and root infiltration. The sanitary sewer system at PTA was not routinely used to receive industrial waste. Typically, the only building in a production area, with a sanitary connection, was the change house, which did not routinely handle hazardous materials. Beginning in the late 1970s, an infiltration problem was identified in the sewer system. The arsenal evaluated the problem and addressed it through re-lining pipes and replacing pipes. As a result of this construction, rubble has been generated and has been deposited in the former location of Building 276 (Area I, Site 100). The rubble consists primarily of broken concrete, asphalt, rocks, and soil. During the past 20 years, several assessments have been made of the condition of the sanitary sewer. Based upon the conclusions of these previous assessments, renovation of the PTA sewer line was conducted in three phases during the 1990s.

STATUS

RRSE RATING:
Medium Risk
CONTAMINANTS OF CONCERN:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC

A PA/SI was conducted in 1996 to evaluate VOCs, SVOCs, pesticides/PCBs, explosives, metals and anions in surface soil. SVOCs were detected at concentrations greater than LOC during the PA/SI. As part of the sanitary sewer renovations conducted in the 1990's, IT Corp collected a total of 30 surface soil samples, at areas of suspected contamination as observed during excavation. PAHs were detected at concentrations greater than the NJNRSCC in samples collected at Buildings 717 and 321, and metals (lead and chromium) were detected above LOC in samples collected from the sewer trench at Building 321. Based upon results of the PA/SI, and additional trench sampling conducted during renovations, RI activities were conducted in 2001. Soil samples were collected at six locations identified by the New York District ACE, the sewer renovation manager. The subsurface soil samples were collected at the depth of the break/leak and analyzed for VOCs, SVOCs, metals, and explosives. No concentrations were detected above LOC in the samples. Since no chemical concentrations exceeded the screening criteria, risk and hazards were not quantified for this site. Ecological risk will be addressed as part of the Phase III Ecological Risk Assessment.

A request for closure will be completed (funded in FY04).

PICA-181, Site 155
Ordnance Facility Bldg 620, 620B

SITE DESCRIPTION

Buildings 620 and 620B are located just south of 20th Circle west of Picatinny Lake and are utilized as an ordnance facility. Limited information is available pertaining to past activities.

This site is currently an active range, thus is not eligible for IRP funds.

Response Completed Date 199710.

STATUS

RRSE RATING:
Not Evaluated
CONTAMINANTS OF CONCERN:
None
MEDIA OF CONCERN:
None
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1997

PICA-182, Site 11
Mun Test Ranges Bldgs 647, 649, 650

SITE DESCRIPTION

Buildings 647, 649, and 650 are located approximately 610 meters northwest of the Picatinny lake inlet along the western boundary of PTA and are utilized as a munitions test range. The test range is approximately 27 acres in size and consists of three separate areas. The western most area near Building 647 consists of a short firing range, where inert projectiles are fired into a large armor-plated box filled with sand. The Building 649 area is northeast of the first area. All that remains in this location is the foundation of a building, where fuzes for detonating explosive devices were stored. The Building 649 area is northeast of the Building 649 area, and is where static testing is conducted.

This site is currently an active range, thus is not eligible for IRP funds.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS OF CONCERN:
Metals
MEDIA OF CONCERN:
Soil, Surface Water
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 1997

PICA-183, Site 164
Gen Purpose Magazine Bldg 1217

SITE DESCRIPTION

Building 1217 is located on 24th Avenue approximately 600 ft southwest of Lake Denmark. Building 1217 is a rectangular one-story structure with a concrete foundation, hollow tile bearing walls, and a gable roof, covered with corrugated asbestos-protected metal. The interior is divided into six separate bays by five hollow tile walls.

Constructed in 1944, Building 1217 was originally used as a storage magazine. It also functioned as a propellant processing facility in the mid-1980s, packaging surveillance propellant samples for testing at a separate facility. In 1990, the building was being used as a propellant storage facility. All the propellant had been removed by March 1996. The building is currently empty and slated to be turned in.

Building 1217 stored a variety of explosives, ranging from 8,000 pounds of Class 7 explosives, to 48,000 pounds of Class 1 through 6 explosives. The most recent allowance, issued in 1988, indicated that the building could store 100 pounds of Class 1.1 explosives in Room 6, and up to 500,000 pounds of Class 1.3 explosives in the remainder of the building.

A 1992 General Safety Program Evaluation indicated that no hazardous waste was generated at this building. A water discharge investigation conducted in 1990 noted the only discharge at the building to be roof drainage to the ground. A PA/SI was conducted in 1996 for VOC, SVOC, pesticides/PCBs, explosives, metals and anions analysis of surface soil. Results of the PA/SI indicated no detections greater than LOC.

No further action is expected.

STATUS

RRSE RATING:
Low Risk
CONTAMINANTS OF CONCERN:
None
MEDIA OF CONCERN:
None
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC

PICA-190, Site 187
Oil & Acid Storage Bldg 67

SITE DESCRIPTION

Building 67 was constructed in 1957 as a chemical storage facility. The building has performed this mission since that time. There are several documented spills at the building. Engineering drawings indicate that floor drains at the building discharged to four dry wells on the building's north side. The loading areas are currently bermed for containment, but previously spills and storm water would discharge to BSB. Potential contaminants include VOCs, SVOCs, PCBs, and pesticides.

In 1998 USACHPPM conducted a relative risk site evaluation (RRSE) including collection of groundwater samples via Geoprobe and surface soil. Groundwater contained lead, arsenic, and chromium above LOC. Traces of VOCs and SVOCs were also detected in these samples. No constituents were detected above LOCs in surface soil. The site risk was scored medium due to groundwater contamination. In 2000, a follow-up investigation was completed as part of the Phase I 2A/3A investigation. In this investigation, groundwater and surface soil were collected for arsenic and lead, and subsurface soil was collected for VOCs, SVOCs, and metals. Metals were detected above LOCs in the unfiltered groundwater samples. Only manganese was detected above the LOC in the filtered groundwater samples. Three of the four dry wells could not be located. The existing dry well is scheduled for removal in 2004.

A request for closure will be completed.

STATUS

RRSE RATING:
Low Risk

CONTAMINANTS:
Metals

MEDIA OF CONCERN:
Groundwater

COMPLETED IRP PHASE:
PA/SI, RI

CURRENT IRP PHASE:
RC

PICA-192, Site 189
Garden & Orchard Near Bldg 111

SITE DESCRIPTION

This site is an apple orchard. It is bordered to the west by Building 34 (Post Cafeteria), to the north and east by residences, and to the south by a parking lot. The exact age of this site is unknown. However, a 1938 PTA map indicates that this site is an apple orchard. The facility harvests the apples to make apple cider.

In 1992, the USAEHA performed a health risk assessment study at the site. As part of the study, surface soil samples were collected from the orchard and analyzed for VOCs, SVOCs, and metals. Arsenic was the only compound that exceeded its LOC. The source of the arsenic is believed to be the application of arsenic-based pesticides to control insect predation on the apples. USAEHA concluded that arsenic concentrations in surface soil, at the Apple Orchard, posed a human health risk.

In 2000, an extensive soil sampling program was conducted to determine the extent of arsenic contamination at the orchard. The sampling determined that the arsenic contamination was widespread throughout the orchard. However, the contamination appears to be limited to the top one to two feet of soil, because subsurface soils (2-3 ft below ground surface) did not contain elevated levels of arsenic. As a result, an Engineering Evaluation and Cost Analysis (EE/CA) was prepared to provide a recommendation for a removal action at the site. The EE/CA evaluated two alternatives (a multi-layer cap and excavation with off-site disposal). Preliminary results from a phytoremediation treatability study have indicated arsenic levels in the ferns ~4 to 7 times the levels in the soil. Results of the HHRA indicate risk from surface soil exposure at the site exceeds the target level of 1E-4. The hazards from surface soil exposure is below the target level of 1. Risk and hazards from subsurface soil exposure are below the target levels.

This site is not eligible for further ER,A funds, since the arsenic appears to be a result of normal pesticide application. All future actions will be with non-ER,A funds.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS OF CONCERN:
Arsenic
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2003

PICA-194
Bear Swamp Brook

SITE DESCRIPTION

This site consists of Bear Swamp Brook from it's headwaters on Green Pond Mountain to the confluence with Green Pond Brook. This area is also referred to as Region 2 in the Green Pond Brook remedial investigation. All environmental issues in Bear Swamp Brook are being addressed in PICA-193. Therefore this site is considered response complete.

STATUS

RRSE RATING:
High Risk
CONTAMINANTS OF CONCERN:
Metals, Pesticides
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 2000

PICA-197
Area O Other Buildings

SITE DESCRIPTION

As explained in the FY99 IAP, PICA-197 has been determined RC based on CHPPM determining there are no other sites in Area O except those previously identified.

STATUS

RRSE RATING:
Not Evaluated
CONTAMINANTS OF CONCERN:
None
MEDIA OF CONCERN:
None
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1997

PICA-198
Area N Other Buildings

SITE DESCRIPTION

As explained in the FY99 IAP, PICA-198 has been determined RC based on CHPPM determining there are no other sites in Area N except those previously identified.

STATUS

RRSE RATING:
Not Evaluated
CONTAMINANTS OF CONCERN:
None
MEDIA OF CONCERN:
None
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1997

PICA-201
Other Bldgs in Area P

SITE DESCRIPTION

As explained in the FY99 IAP, PICA-201 has been determined RC based on CHPPM determining there are no other sites in Area P except those previously identified.

STATUS

RRSE RATING:
Not Evaluated
CONTAMINANTS OF CONCERN:
None
MEDIA OF CONCERN:
None
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1997

PICA-202
Other Bldgs in Area J

SITE DESCRIPTION

As explained in the FY99 IAP, PICA-202 has been determined RC based on the evaluation by CHPPM.

STATUS

RRSE RATING:
Not Evaluated
CONTAMINANTS OF CONCERN:
None
MEDIA OF CONCERN:
None
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1997

PAST MILESTONES

RP Phase	Completion Date
Initial Installation Assessment (IA)	Jul 76
USA AEHA Geohydrologic Study	May 77
Update of Initial IA	Oct 80
USA AEHA - Groundwater Assessment Report	Feb 84
USGS - Geohydrologic Studies	Jan 86
NJDEP - RCRA Facility Assessment	Feb 87
USGS - Groundwater Studies	Feb 87
USGS - Building 24, Groundwater Investigation	Jan 88
Record of Decision - Interim Action for the Building 24 Plume	Oct 88
PA/SI - Phase I Area	Jul 89
USGS - Building 95, Groundwater Investigation	May 90
Argonne National Lab - RI concept Plan	Mar 91
Removal Action - Post Farm Landfill	Oct 91
Approval of Burning Ground RI/FS Workplan	Mar 93
Approval of Phase I RI/FS Workplan	Sep 93
DRMO (Site 31) SI	Mar 94
Buildings 1363 and 1363A PA	Oct 94
Buildings 1373A and 1373 SI	Nov 94
Approval of Final RI Report for Burning Ground	Dec 94
Arsenal-Wide Wetlands, Floodplain Survey	Nov 94
Approval of Phase II RI Workplan	May 95
Submittal of Phase I RI Report	Jun 95
Public Notice of Engineering Evaluation/Cost Analysis for 4 Sites	Nov 95
Removal Action of 3 Small Radioactive Contaminated Sites	Mar 95
Submittal of Burning Ground FS	Nov 95
EE/CA 1363A and 1373	Jun 95
Final Report 1363A and 1373	Oct 95
Completion of Union Turnpike Waterline	Jan 96
Site Investigation Plan for Phase III Sites	Jul 96
EPA Five Year Review	May 96
Additional Sampling Work Plan for Phase I lA Sites	Apr 97
Area D Data Gap Work Plan	Aug 97
Area D Air Sampling Report	Nov 97
Post Farm Report	Dec 97
Phase II Ecological Risk Plan	Dec 97
Phase III 1A Sites RI Work Plan	Dec 97
Phase III Site Investigation Report	Dec 97
Group 1 and Group III Work Plan for Additional Investigation	Dec 97
Final Area D Groundwater Feasibility Study Data Gap Work Plan	Dec 97
Final Facility Wide Health & Safety Plan	Feb 98
Final Site 20/24 Data Report & Additional Investigation Work Plan	May 98
Final Post Farm Fracture Trace Analysis Report	Aug 98
Final Trenching and Sampling Work Plan Site 180	Sep 98
Final Workplan Summary Investigation Tables for Phase III 1-A Study Sites	Sep 98
Final Facility Wide Field Sampling Plan	Sep 98
Final Work Plan for Areas F & G Groundwater Remedial Investigation	Dec 98
Final Phase I RI Reports	Dec 98

Final Green Pond Brook & Bear Swamp Brook Surface Water/Sediment Feasibility Study Data Gap Work Plan	Dec 98
Final Work Plan for Buildings 31 and 33	Feb 99
Proposed Plans for RC with Institutional Controls	Apr 99
Draft Final Phase II, RI Report	Apr 99
Original Regulatory Submission of the Phase II Report	Apr 99
Draft Final Proposed Plan No Response Action with Existing Institutional Controls and Land Use Control Assurance Plan for Sites: 19, 22, 28, 44, 49, 86, 104, 106, 124, 135, 141, 143 145, 163, 182 and 183	May 99
Final Facility-Wide Quality Assurance Project Pla	May 99
Final Work Plan for SI for Sites 3, 31, 108, 192 & 199	Jun 99
Final Area E Groundwater Feasibility Study Data Gap Investigation Workplan	Jul 99
Draft Final Phase l 2A/3A Sites Additional Investigation Work Plan	Aug 99
Final EE/CA 122 (DSERTS #011) PCB Soils at Building 60/60-A Area	Sep 99
Phase I Additional RI Sites Report 22, 44, 61, 104, 122, 135, 141 & 145	Sep 99
Final Area B Data Report/Groundwater FS Data Gap Investigation	Oct 99
Feasibility Study for Site 20/24 for Soils	Oct 99
Draft Final Phase III 2A/3A Sites Additional Investigation Workplan	Oct 99
Final Additional Site Investigations Sites 3, 31, 192 & 199 Workplan	Nov 99
Final Facility-Wide Background Investigative Workplan	Nov 99
Draft Final Investigative Workplan for Guncotton Line	Dec 99
Submission of Phase II Ecological Risk Assessment Report	Feb 00
Regulatory Submission of Green Pond Brook FS and Data Analysis	Mar 00
Lake Denmark Ecological Workplan/Rpt.	May 01
Post Farm Feasibility Study	Jun 01
Burning Ground FS	Aug 01
Phase II Group 3 Additional RI Report	Oct 01
Green Pond Brook FS and Data Analysis	Mar 00
Phase I Risk Management Report for Ecological Issues	Apr 00
RI Report for GW in Areas F and G (Mid-Valley)	Apr 00
Building 31/33 RI Report	May 00
Short Investigative Report for Site 104	Jun 00
Draft Final Phase III 1A Report (Data Analysis)	Jul 00
Additional Sampling in Area L Schematic	Aug 00
Phase I Risk Management Report for Ecological Issues	Aug 00
Background RI Report	Sep 00
Regulatory Submittal of Background Study Report	Sep 00
RI Report for Phase III 1A Report	Oct 00
FS for Area E GW	Oct 00
RI Report (Data Analysis) for Site 180	Nov 00
Site 122 Removal Action Report	Nov 00
FS for Area E	Nov 00
Phase III Risk Assessment Approach	Dec 00
Phase II Sediment and Surface Water	Dec 00
Final Proposed Plan for Site 20/24	Dec 00
Green Pond Brook FS	Jun 01
Area D Groundwater FS	Jul 01
Phase II Group 1 Additional RI Report – Draft Fina	Sep 01
Interim Report for Area C Wells	Oct 01
Proposed Plan for the Post Farm (Site 23)	Oct 01

Phase II Sediment and Surface Water Risk Assessment	Dec 01
Proposed Plan for Green Pond Brook	Jan 02
Sumps and Drywell Workplan	Jan 02
Proposed Plan for Burning Grounds (Site 2)	Feb 02
Regulatory Submission of Phase III 1A Report	Feb 02
RI Report for Buildings 31/33	May 02
Signed Record of Decision for 20/24	Jun 02
Proposed Plan for Area D Groundwater	Jun 02
Fish Ingestion Risk Assessment Report	Jun 02
Phase I RI Report for 2A/3A Sites	Jun 02

PROJECTED MILESTONES

Year of RA Funding Completion:	2010
Year of IRP Completion:	2033
Long Term Monitoring until:	2033

NO FURTHER ACTION SITES

SITE		RC DATE
PICA-007	INACTIVE ROCKET FUEL TEST G-2 AREA (SITE 1)	200306
PICA-010	BUILDING 95 FORMER WASTE IMPOUNDMENTS	200306
PICA-012	BLDG 3022 PHYS ANAL LAB/ENERG (SITE 83)	200306
PICA-018	FLOUROCHEMICAL STRG (3045) (SITE 30)	200306
PICA-020	PYROTECHNIC DEMO AREA (SITE 19)	199702
PICA-021	FORMER NG PROC AREA (1361A-1364) (SITE 35)	200306
PICA-036	PROPELLANT PLANT (1010) (SITE 106)	199702
PICA-037	FORMER HAZ WASTE TANK STOR (1380) (SITE 51)	200306
PICA-047	STEAM POWDER PLANT BLDG 506 (SITE 63/65)	200306
PICA-052	SHELL BURIAL AREA (NEAR B-3100) (SITE 6)	200306
PICA-054	MUNITS & PROPLT TST AREA (B-1222)(SITE 8)	199702
PICA-055	MUNITS AND PROPLT TEST AREA (B670, B673, B674), AREA N, RI SITE NO. 9	200107
PICA-056	FORMER CHEMICAL BURIAL AREA (SITE 10)	200306
PICA-059	MUNITS/PYROTEC TEST AREA (B-640) (SITE 13)	199702
PICA-060	MUNITIONS TEST AREA (B-636), AREA N, RI SITE NO. 14	200106
PICA-061	MUNITIONS TEST AREA (B616, B654), AREA M, RI SITE NO. 15	200106
PICA-063	PYROTECHNICAL TESTING RANGE, AREA B, RI SITE NO. 20	200205
PICA-064	POACH HOUSE (520) (SITE 147)	200306
PICA-068	DREDGE PILE (SITE 26)	199702
PICA-070	SEWAGE TRMT PLANT SLUDGE BEDS (B80) SITE 28	199702
PICA-073	BLDG 553 STORAGE TANKS (SITE 32)	200306
PICA-074	BLDG 527A STORAGE TANKS (SITE 33)	200306
PICA-078	VECHICAL MAINT WASTEWATER PRETREMENT FAC BLDG 31 SITE 39	200103
PICA-080	FORMER LAB PACK FAC (B-1094) SITE 41	200306
PICA-081	FORMER PCB CTORAGE AREA (B-3114) SITE 42	200306
PICA-082	PESTICIDE STORAGE AREA (B-3157) SITE 43	200306
PICA-083	90-DAY ACCUMULATION AREA (BLDG 39), AREA E, RI SITE NO. 44	200008
PICA-084	VEHICLE MAINTENANCE (BLDG 33) SITE 45	
PICA-086	HEAVE EQUIP MAINTENANCE (BLDG 3005 & 3006)	200306
PICA-087	90 DAY ACCUMULATION AREA BLDG 3315	200106
PICA-088	FORMER 90-DAY ACCUM. AREA (BLDG 19&19A), AREA D, RI SITE 49	199706
PICA-089	PETROLEM LEAK AREA (BLDG 305) SITE 52	200306
PICA-092	BASEBALL FIELDS (SITE 163)	199702
PICA-095	BLDG 12, PHOTO PROCESSING FAC (SITE 86)	199702
PICA-099	BLDG 5, ARSENAL REPRTION & TRNG OFF (182)	199702
PICA-100	GRAPHIC REPRODUCTION &TRNG BLDG 58 (183)	199702
PICA-101	BLDG 163 PHOTOGRAPHY LAB (SITE 60)	
PICA-103	BLDGS 161 & 162, CHEMICAL LAB (SITE 104)	200306
PICA-104	BLDGS 454 & 455, PROPELLANT BAG FLG AREA	200306
PICA-105	BLDG 166, PROPELLANT TEST (SITE 124)	199702
PICA-106	BLDGS 172 & 183 & BLDGS IN 400 AREA	200306
PICA-107	BLDGS 404, 407 & 408 CHEMICAL LAB & PROP PLANTS	200306
PICA-109	BLDGS 427 & 427B PROPELLANT PRO (SITE 140)	200306
PICA-110	BLDG 429, PROPELLANT CRUSHING, AREA F, RI SITE NO. 141	200008
PICA-112	BLDG 436, PROPELLANT PROCESSING (SITE 143)	199702
PICA-113	BLDG 462, PROPELLANT FINISHING (SITE 144)	200306
PICA-115	BLDG 497 POWDER PRESSING (SITE 146)	200306
PICA-116	BLDG 311 & 319 FORMER GAS STATION	200306
PICA-117	BLDG 302 SERVICE SHOPS (SITE 134)	200306

NO FURTHER ACTION SITES

PICA-118	METALLURGY LAB BLDG 315	200108
PICA-119	BLDG 355 METALLURY LAB (SITE 136)	200306
PICA-120	FORMER BLDG 24, PLATING FACIL, AREA D, RI SITE NO. 21	200008
PICA-121	BUILDING 336 - EXPLOSIVE LAUNDRY	200306
PICA-123	FORMER HAZ WASTE STOR/FUSE ASS(BLDG 210)	200306
PICA-124	LOADING/DISASSEM BLY PLT (BLDG241)SITE 64	200306
PICA-125	MINE ASSEMBLY FACILITY(BLDG 268) SITE 98	200306
PICA-126	EXP LOADING FACILITY (BLDG 276) SITE 100	200306
PICA-127	MELT CASTING OPERATION (BLDG 230)SITE127	200306
PICA-128	EXP PRESSING PLT (BLDGS235/236) SITE 128	200306
PICA-129	CHANGE HOUSE (BLDG 240) SITE 129	200306
PICA-130	POWDER PRESS/PELLETING(BLDG 252) SITE 130	200306
PICA-131	FORMER ORDNANCE MANUFAC (BLDG 266)	200306
PICA-132	FORMER LOAD FACILITY (BLDGS 271/271I-N)	200306
PICA-133	CHANGE HOUSE (BUILDING 600) SITE 151	200306
PICA-137	XRAY PHOTOPROCESSING LAB (BLDG 908) SITE 82	200306
PICA-138	ELECTROMAG GUN TEST SHED (BLDG 329) SITE 90	200306
PICA-139	AMMUN DEMO 1 ORD FAC(BLDGS800/807)SITE93	200306
PICA-140	POST ENG MAINT SHOP (BLDG 501) SITE 97	200306
PICA-141	FORMER ENLISTED MENS BARRACKS(BLDG 3050	200306
PICA-142	PROPELLANT PLANT (BLDG 511) SITE 105	200306
PICA-144	PYROTECHNIC PLANT (BLDG 445) SITE 109	200306
PICA-145	500 AREA BUILDINGS SITE 110	200306
PICA-146	PROPELLANT PLANT (BLDG 561) SITE 113	200306
PICA-147	ADMINISTRATION BLDG (BLDG 382) SITE 137	200306
PICA-148	CHANGE HOUSE (BLDG 527) SITE 148	200306
PICA-149	PROPELLANT PLANT (BLDG541) SITE 149	200306
PICA-150	PROPELLANT PLANT (BLDG 555) SITE 150	200306
PICA-151	ORDNANCE BLDGS 813, 816/816B	200306
PICA-152	ORDNANCE FAC (BLDGS 820,823) SITE 157	200306
PICA-153	HIGH-EXP MAGAZINE (BLDG 926) SITE 158	200306
PICA-154	SUPPLIES & SER. BLDG (BLDG 975) SITE 159	200306
PICA-156	REFRIG. & INERT GAS PLT(BLDG 523)SITE184	200306
PICA-157	FORMER MOTORS/ROC FUEL TST AREA(3600)	200306
PICA-159	PARKING AREA ACROSS FROM BLDG 3328	200306
PICA-160	CHEM LAB & ADMIN BLDG (BLDG 3404)SITE173	200306
PICA-164	RESERVOIR NEAR BLDG 3159 SITE 103	200306
PICA-165	FORMER EXPLOSIVES LOADING (BLDG 1033)	200306
PICA-166	FORMER ORDNANCE FACILITY (BLDG 1029)	200306
PICA-167	FORMER PROP PLT/ORD FAC(BLDGS1373,1374)	200306
PICA-168	PROPEL PLTS/PRESS HOUSE 1400,1402-1403	200306
PICA-169	PROP PLTS (BLDGS1408,1408AC, 1409,1411)	200306
PICA-170	PROP MELT PLTS (BLDGS1462-1464) SITE 170	200306
PICA-172	FORMER NITRATION BLDG (BLDG 1031)	200306
PICA-173	FORMER EX MAN/STOR(BLDGS1070,1071,1071C)	200306
PICA-174	FORMER PROP PLTS(BLDGS1354,1357,1359)	200306
PICA-176	LITTLE LEAGUE BASEBALL FIELD SITE 176	200306
PICA-177	SAN SEWER SYSTEM BREAKS/LEAKS SITE 177	200306
PICA-178	ORDNANCE FAC (BLDGS 604,604C) SITE 152	200306
PICA-179	ORDINANCE FACILITY (BLDG 606)	200306
PICA-180	FIELD OFF DISASS (BLDGS 617, 617G) SITE 154	200306

NO FURTHER ACTION SITES

PICA-181	ORDNANCE FAC (BLDGS 620,620B) SITE 155	199710
PICA-182	MUN TEST RANGES (BLDGS 647, 649, 650), AREA N, RI SITE NO. 11	199702
PICA-183	GEN PURPOSE MAGAZINE (BLDG 1217) SITE 164	201409
PICA-185	PROP STORAGE (BLDGS46,47,48) SITE 119	200306
PICA-186	PROPELLANT STORAGE (BLDG 50) SITE 120	200306
PICA-187	CHEMICAL STORAGE (BLDG 57) SITE 121	200306
PICA-188	FORMER LABORATORY IN BLDG 350 SITE 185	200306
PICA-189	FIREHOUSE (BUILDING 3316) SITE 186	200306
PICA-190	OIL & ACID STORAGE (BLDG 67) SITE 187	
PICA-191	FORMER COAL STORAGE AREA (BLDG 3173)	200306
PICA-192	GARDEN & ORCHARD NEAR BLDG 111 SITE 189	200306
PICA-194	GREEN POND BROOK, RI SITE NO. 194	200008
PICA-197	AREA O OTHER BUILDINGS	199710
PICA-198	AREA “N” OTHER BUILDINGS	199710
PICA-201	OTHER BUILDINGS IN AREA P	199710
PICA-202	OTHER BUILDINFS IN AREA J	199710
PICA-203	FORMER POISON GAS LAB	200306
PICA-208	DU SCRAP STORAGE AREA	200306
PICA-210	BUILDING 321	200306

ARDEC IAP Schedule

(Based on Cost to Complete with current funding constrainst)

		FY05	FY06	FY07	FY08	FY09	FY10+
PICA-001	RI/FS						
	RD						
	RA						
	LTM						
PICA-002	RA						
	RA(O)						
PICA-006	RI/FS						
	LTM						
PICA-008	RD						
	RA						
	RA(O)						
	LTM						
PICA-011	RI/FS						
	LTM						
PICA-013	RI/FS						
	RD						
	RA						
	LTM						
PICA-015	RI/FS						
	LTM						
PICA-022	RI/FS						
	RD						
	RA						
	LTM						
PICA-029	RI/FS						
	LTM						
PICA-050	RI/FS						
	LTM						
PICA-053	RI/FS						
	LTM						
PICA-057	RI/FS						
	LTM						
PICA-058	RI/FS						
	RA						
	LTM						
PICA-065	LTM						
PICA-066	LTM						
PICA-067	RD/RA						
	LTM						
PICA-069	RI/FS						
	LTM						
PICA-071	RI/FS						
	RA						
	RA(O)						
	LTM						
PICA-072	RD						
	RA						
	LTM						
PICA-075	RI/FS						
	LTM						
PICA-076	IRA						
	RA						
	RA(O)						
PICA-077	LTM						

ARDEC IAP Schedule

(Based on Cost to Complete with current funding constrainst)

		FY05	FY06	FY07	FY08	FY09	FY10+
PICA-079	RI/FS						
	RD						
	RA						
	RA						
	LTM						
PICA-085	RI/FS						
	LTM						
PICA-091	RI/FS						
	LTM						
PICA-093	LTM						
PICA-094	RI/FS						
PICA-096	RI/FS						
	LTM						
PICA-097	RI/FS						
	LTM						
PICA-098	RI/FS						
	LTM						
PICA-102	RI/FS						
	RD						
	RA						
	RA						
	LTM						
PICA-108	RI/FS						
	LTM						
PICA-111	RI/FS						
	LTM						
PICA-114	RI/FS						
	LTM						
PICA-122	RI/FS						
	LTM						
PICA-134	RI/FS						
	LTM						
PICA-135	RI/FS						
	LTM						
PICA-136	RI/FS						
	RD						
	RA						
	LTM						
PICA-143	RI/FS						
	LTM						
PICA-155	RI/FS						
	LTM						
PICA-158	RI/FS						
	LTM						
PICA-161	LTM						
PICA-162	LTM						
PICA-163	RD						
	RA						
	LTM						
PICA-171	RI/FS						
	RD						
	RA						
	RA						
	LTM						

ARDEC IAP Schedule

(Based on Cost to Complete with current funding constrainst)

		FY05	FY06	FY07	FY08	FY09	FY10+
PICA-175	RD						
	RA						
	LTM						
PICA-184	RI/FS						
	LTM						
PICA-193	RA						
	LTM						
PICA-195	RI/FS						
	RD						
	RA						
	LTM						
PICA-199	RI/FS						
	RA						
	LTM						
PICA-200	RI/FS						
	LTM						
PICA-204	RI/FS						
	LTM						
PICA-205	RD/RA						
	RA(O)						
PICA-206	RI/FS						
	RA						
	RA(O)						
PICA-207	RI/FS						
	LTM						
PICA-209	RI/FS						
	RD						
	RA						
	LTM						

Remediation Activities

Past REM/IRA/RA

Interim Action for Building 24 Plume (PICA-76 and 120): An interim Action ROD was signed by the Army in October of 1989. A contract was awarded to Engineering Technologies Associates, Inc. in September 1988, to perform a modeling study to support the conceptual design. Using the results of this modeling, the Corps of Engineers, Huntsville Division, awarded a service contract for the performance of an interim remedial action at Building 24. The results of the model and the USGS investigation were incorporated into a ROD. The ROD was concurred on by both the EPA and NJDEP. The purpose of the interim remedial action was to arrest the flow of TCE plume from migrating further and therefore entering Green Pond Brook by creating a hydraulic barrier and discharging the effluent into Green Pond Brook.

- The Groundwater Treatment Facility, or pump and treat, consists of the following: a) five extraction wells which are screened above the clay unit (or approximately 50 feet below the land surface); b) a filtration system to filter the fines and high iron in the water; and c) two air stripper columns and carbon filters to extract the volatile organics (TCE) from the groundwater. The system discharges into Green Pond Brook slightly downgradient of the plume.

- The USGS completed two reports assessing the effectiveness of the hydraulic barrier of the system. The EPA public noticed its first 5-year review in 1996 of the interim action ROD originally developed by the Army. According to the 5-year review, the pump and treat is providing an effective hydraulic barrier but a sixth well may be needed. The possibility of a new well was based on the analysis provided in the USGS report and a revised model used for the origin design. Picatinny took necessary steps to increase flow from the well field by first increasing the capacity of the line from the tank to the pump and treat itself. These repairs to the interim action pump and treat increased the flow rate from sixty (60) gallons per minute to one hundred (100) gallons per minute. This is consistent with EPA's first five-year review.

- The regulators have agreed that the interim action will be replaced by a permeable treatment barrier in the future and in so identified a draft proposed plan.

EPA developed a 2nd 5-year review addressing this interim action in which it was claimed that Picatinny was not complying with the 1st 5-year review or the original ROD despite the information noted above. The EPA was convinced by the information and a revised model provided and discussed at a March meeting that a supplemental well next to the lowest yielding pumping well would form an adequate hydraulic barrier. Picatinny also agreed to perform a study to ensure that. The supplemental well was installed and the existing pumping wells were re-jetted. The wells are now pumping an average of about 100 gallons per minutes.

Offsite contamination at the Southern Boundary/Wharton Line Hookup (no specific PICA No. assigned).

Sampling of off-post residential wells near the southern boundary of Picatinny occurred annually from 1988 through 1990. Analytical results from the October 1990 sampling event indicated the presence of explosive compounds in three of the homeowners' wells. Bottled water was provided to these residents immediately and continuously until the potentially effected residents were hooked up to the Wharton waterline in January 1996.

- In February 1991, the Army began a monthly monitoring program for approximately 16 off-post homeowner wells. During the first year, there was one instance of an explosive compound (RDX) detected during one sampling event at a very low level. Based on the cost of the additional sampling that would be required to confirm the issue of contamination, the Army signed a Decision Document to provide a waterline extension to Wharton Township's waterline.

- To complete the project, a Memorandum of Agreement between the Corps of Engineers and Rockaway Township was signed. Funding was provided through the Corps of Engineers to Rockaway Township which extended the waterline hookup from the neighboring community (Wharton Township) to the effected homes. The project was completed in January 1996.)

Remediation Activities

Post Farm Non-time Critical Removal Action (PICA-065): In the winter of 1991 and Spring of 1993, removal actions occurred at the Post Farm Landfill (RI Concept Plan No. 23). Over 300 drums and containers (containing oil, tar, batteries, wastewater, polystyrene pails, contaminated soil, scrap metal and contaminated fly ash) were removed from the area. Extensive amounts of fly ash remained to be addressed under the RI Phase I investigation.

Homeowner wells downgradient of this site were sampled once and found to be uncontaminated. Soil removal areas were fenced off and further investigations were integrated into the feasibility study which is ongoing.

RCRA Closures and Underground Storage Tank (UST) Program

- Underground Storage Tank Program (UST): Picatinny Arsenal has removed 88 USTs. Some funding for removals was from the DERA.

- Hazardous Waste Closures: Picatinny Arsenal has completed 47 closures. Funding for the closures was from the DERA and ECAP accounts.

Smaller Removals

- DRMO Yard (PICA-72): The non-time critical removal action site investigation indicated that a removal in that area was not necessary.

- Buildings 1363A and 1373 (PICA-167): A removal action was completed in 1995. Soils contaminated with lead were removed. Some lead contamination remains and will be further investigated within Phase III RI for 1A sites.

- A Removal Action in 1995 was taken at three small sites where radioactive contaminated soils were removed (Areas H and M). Project did not use ER,A funding. Report was submitted to regulatory agencies. All soils were removed to nonresidential cleanup levels.

- Building 60/60-A (PICA-011) PCB Contaminated Soil Removal: A removal action was completed in 1999 behind Buildings 60/60-A. Soils contaminated with PCBs were removed and taken offsite.

- Guncotten Line (Pica 65): A investigation that removed the guncotton line in front of building 506 was completed in the year 2000.

- A decision document was signed in spring of 2001 for the removal of Tetryl contaminated soils at PICA 001, the Tetryl Pits. The action is ongoing and is being co-funded with “Range Safe” dollars.

- A decision document was signed in July of 2002 for a removal action for the excavation and disposal of sediment in Bear Swamp Brook. The funding for the action provided in September. The action is consistent although not complete representation, of the proposed alternative described in with draft Proposed Plan for Green Pond and Bear Swamp Brook. Because a number of reviews of Proposed Plans by the EPA had been stalled as a result of the DOD/EPA controversy concerning the enforceability of land use controls issue; we decided to develop the Engineering Evaluation/Cost Analysis was developed for the removal of sediment from the Bear Swamp Brook Retention (new) Ponds. The Remedial Design Workplan was approved in calendar FY 03. The EE/CA and workplan both state that the remediation of the ponds should occur during a dry period of weather so the brook would not be running and the excavation part of the task would be easier.. However, weather conditions never allowed implementation until the Fall of 2003. At this time (December 2003), the basins have been excavated and only the disposal and repair of the site remain.

A lead removal EE/CA was signed in 2003 that includes the removal and disposal of 6 lead hot spot at various sites. The criteria used in the EE/CA of when to perform a removal action for lead is the triggering on the adult lead model. Cleanup criteria however will be the NJNRDCSCC for lead. This was reached at a technical partnering meeting during the calendar year. The Lead Removal Action Workplan was submitted to the regulators in the fall of 2003. It included removals at the following RI Concept Plan/DSERTs sites:

RI Concept Site	AEDB-R Site
139	108
142	11
209	209
161	172
171	171

Two investigative workplans for the investigation and removal of sumps and drywells have been approved by the regulators. These workplans address the sampling underneath these mostly abandoned structures at many sitesl. The 60+ structures include sumps, drywells, catch tanks, catch basin, drainage ditches and impacted soils.

Pilot Studies have been implemented at the various sites including

Groundwater Area	Type of Pilot Study
Area B Groundwater	HRC and ORC
Area D Groundwater	HRC
Area D Groundwater	Propane, Magnus
Site 78 Groundwater	Sodium lactate

Future REM/IRA/RA

IRA at PICA-022, 047, 076

RA at PICA-001, 002, 008, 010, 013, 050, 067, 071, 072, 076, 079, 102, 103, 111, 136, 145, 165, 171, 173, 193, 205, 209.

Community Involvement

RESTORATION ADVISORY BOARD (RAB) STATUS

The surrounding community for Picatinny Arsenal includes the Towns of Dover, Jefferson, Rockaway, Denville and the Borough of Wharton In 1989 a Technical Review Committee (TRC) was formed to address citizens' concerns over environmental issues at Picatinny Arsenal. In December 1995, the TRC evolved into the Restoration Advisory Board (RAB). This board includes representatives of the Army, the U.S. Environmental Protection Agency (EPA) Region 2, the New Jersey Department of Environmental Protection (DEP), representatives of the surrounding towns from Dover, Jefferson, Rockaway and Denville, the Borough of Wharton, the Rockaway Township Environmental Commission, a Union Representative from Picatinny Arsenal, the New Jersey Institute of Technology and citizens from the surrounding communities. A decision was made by the RAB during FY 03 to continue the services of Subsurface Solutions as the TAPP contractor. Picatinny awarded a purchase order (PO) for 25k to Subsurface Solutions. The PO is for one year and has 2 option years associated with it.

Technical Assistance for Public Participation (TAPP) Program:

The RAB expressed an interest in the TAPP Program and Picatinny Arsenal was one of the first installations to have a TAPP contractor on board. This year Picatinny has successfully renewed the TAPP contract effective July 1, 2000 for one basic year and two optional years (ending 8/03).

1. The TAPP contractor continues to attend all partnering and technical meetings between the Army and the regulators, Installation Action Plan Meetings and RAB meetings. The contractor also is provided all technical documents and Picatinny a copy of all correspondences.

2. The contractor also provides frequent updates to the RAB of the technical issues and resolutions from the regulatory meeting. She provided a suggestion on the Site 22 Feasibility study which resulted in an IC only rather than an active remediation.

The contractor also provided comments to the Area D Proposed Plan as requested by the RAB. The comments implicitly provided a technical acceptance of the Proposed Plan.

During latest period, some of the more noteworthy incidents included:

1. The RAB reelected Mr. Glaab as the government co-chair in calendar 2003.

2. Meetings continue on roughly a quarterly basis.

3. Site tour on remediation project and pilot studies occurred in September of 2003. An abbreviated RAB meeting occurred at Picatinny after the tour. The tour was well attended.

4. RAB gave an award of recognition to Wharton Public Library as well as for former RAB members. State Senator Anthony Bucco and Assemblyman Michael Carrol gave the awards. LTC Crone gave an Appreciation Award to the Co-Chair Michael Glaab from Picatinny.

5. The RAB was presented the Area D Proposed Plan in light of the upcoming Public Meeting.

6. RAB meeting was held concurrently as the Public Meeting for the 2 Proposed Plans.